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THE MEANING OF PERSONAL LIFE

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THE MEANING OF PERSONAL LIFE

BY

NEWMAN SMYTH

"Of all I see, in earth, and sky,—
Star, flower, beast, bird,—what
Part have I?"
—WHITTIER.

NEW YORK
CHARLES SCRIBNER'S SONS
1916

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TO

MY WIFE

WHO HELPED ME PUBLISH MY FIRST BOOK
WHOSE LOVE HAS BEEN MY STEADFAST LIGHT THROUGH
THESE SEARCHINGS FOR LIFE'S MEANINGS

I DEDICATE

THIS FRUIT OF MY LATER YEARS

PREFACE

This book is the result of studies of the meanings of nature and life, which the author has pursued since the publication in 1902 of his Lowell Lectures, *Through Science to Faith*. Since then the author has from time to time taken up anew the conclusions to which he had been led in that volume, and it has been his aim to review the reasonings of that earlier book as though it were the work of another. From more recent scientific researches and working-theories he has sought to know better what is the real meaning of the final and supreme fact in nature of the personal life. This is no easy task; for all ways of investigation lead up toward this ultimate problem, yet no science by itself alone can tell the answer to the old question, What is your life? The reasonable answer, which religious faith seeks, is ultimately to be found at the point where all the ways of knowledge meet. Though such inquiries must traverse many fields of the specialists and among confusing side-paths, nevertheless, the method of such pursuit of truth may be simple and straightforward.

Many summer wanderings through the solitudes of the woods of northern Maine may have unconsciously taught me the method which I have pursued through the following pages. As described more fully in the opening chapter, it is to look at first all around for any slightest indications of direction; and then, keeping preconceived ideas out of mind, to follow the trail from sign to sign. Accordingly I must begin in the first chapter by taking notice of some scientific teachings con-

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cerning the first, least things that are known. Possibly the general reader may find some of these earlier pages too scientific to possess for him any personal interest; but they are of primary importance for our present purpose. For, in order to know ourselves, we must go back, as far as our knowledge possibly can, to the point where we, the latest born of the children of nature, began first to be. Otherwise, if we do not observe intelligently whatever physical science or biology may discover concerning the origins of things, in our haste to find the way of life we may only circle round and round, and never come out of the metaphysical woods. The subject-matter will become more familiar, and of more human interest, as in the succeeding chapters we shall be led through our own experience of life on and up to the fulfilment alike of nature and of personality in the Son of man. Only thus, when we shall have come to the close of this search from sign to sign to know the meaning of our life here and now, may faith look up toward the unrevealed mystery of life beyond, and ask of all the sciences whether such knowledge as we do have of our present kind of life is not enough to yield a reasonable hope that it shall be continued hereafter.

For the sake of readers who may have little leisure or inclination for philosophical and scientific studies, but who desire to think of these things, I have avoided technical terms of the schools, so far as accuracy would permit; where more critical discussions or references seemed desirable, I have inserted paragraphs of that nature in smaller type. The chapter on the *Fulfilment of Personal Life in Jesus Christ* has been taken in part from my recent small book of four lectures on *Constructive Natural Theology*.

It would be idle for one to assume in such inquiries an attitude of entire detachment from his own mental

heredity or preformed beliefs; but one may be resolved to accept unhesitatingly every ascertained fact, as well as to entertain any probable working-theory of modern science, whatever may seem to be its bearings upon his habits of thinking; he must do so, if he is to be a teacher of thinkers or a true prophet of religion among men. I may commend, therefore, to students of the meanings of the world and ourselves, both in the laboratories and in the schools especially of religion, the simple yet searching method, which I have desired to follow, irrespective of any mistakes into which I may have fallen by the way, in the hope that, as knowledge advances, they may be led to more open vision and assurance of the immortal meaning of the personal life.

New Haven, March 1, 1916.

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THE MEANING OF PERSONAL LIFE

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CHAPTER I

THE EARLIEST SIGNS OF MEANING

LIFE brings to us daily questionings concerning the meanings of things; but the one question running through them all is: What do we mean to ourselves? The supreme problem of the world for us is: What is the ultimate meaning of the personal life?

Modern science requires of philosophy a revision of our conception of personality. In the light of new knowledge of nature we are to seek anew to know ourselves. We are facts of nature amid other facts of nature, having our being in the one whole of existence, coming to ourselves in the relations of all the elements and influences that make the universe what it is. Our consciousness of being is set in the mould of nature, and modern science will have us interpret ourselves from the nature side. Such is the end to be pursued in the following pages. Our quest is to seek what natural signs, if any, of an ultimate meaning and worth of personal life may be discerned.

The method to be followed is simple and easy to state, though difficult to pursue; it is to accept every scientifically ascertained fact, and to ask of each in succession: Toward what does it point? Not What, taken by itself, does it prove? but What, beyond itself, may it signify? We assume thus the modern scientific postulates of the

wholeness of the existing universe, its continuities of relations, its conservations of matter and energy. We are not to attempt to force any observed fact to fit any preconceived idea; we are to inquire what it is and may mean in its relation to what immediately precedes or follows it. We may thus reach finally a position where we may perceive whether all the facts within the compass of our present knowledge indicate any definite direction toward any end; whether, taken all together, they have any meaning or worth which we may reasonably receive and trust. As we are careful at every step of the way not to force the facts of nature and life into any preformed conceptions of ourselves, we may bring to some assured conclusion the search for the final value of our own full consciousness of personal being.

Where, then, in such endeavor to know ourselves as personal facts of nature are we to begin? Mr. C. Lloyd Morgan, in his latest book, *Instinct and Experience*, commences his investigation at that exact point in evolution where the chick of the moor-hen makes its first peck at its shell. He starts there, he tells us, because he must start from somewhere. It is not his object, as a scientific observer, to enter into any question concerning the source of things, but to investigate how animal nature, as it is constituted, acts, and what are the laws of its constitution in accordance with which an organism behaves. But if we would know what it really is, our inquiry cannot strike into the course of evolution at any arbitrarily fixed point. To apprehend ourselves in our origins or our possible destiny, we must go back through all that is known to have been before us—before historic man, before the cave-dwellers, before the entire organic order and development —back to the molecules, the electrons, those least supposable particles of matter with their electric charge; back through the whole process and continuity of evolution as far as science in its most venturesome research may pene-

trate toward the "source." There, where all knowledge ends and science just begins, we are to put our first point of personal interrogation: What sign of anything beyond itself does the first elementary form of existence bear?

Such inquiry concerning the emergence and meaning of our own selfhood will compel us to traverse fields of scientific research which no one mind is capable of knowing as the specialist in each may do; yet it is not a too presumptuous task for one who is not a specialist to pursue a limited but straightforward path of inquiry through these fields, which offer on every side opportunities for research so boundless.

What we shall have to do, then, in this inquiry is to follow from fact to fact, from sign to sign, the order of nature and the way of life; not until we shall have done this shall we be in a position to judge whether, as a whole, the universe, so far as known, and ourselves in it and of it, have intelligible meaning. It will not be necessary in the pursuit of this end to detain the general reader with detailed scientific technicalities, which require an expert's familiarity to be understood. It should be required of us to start from observed facts, and all the way through to keep close to the facts of experience. Nor should any knowledge be passed by which may seem to run counter to the course which other facts may seem to indicate. If we begin with a minimum of postulates we may hope for a maximum of rational assurance in our conclusion. Our starting-point, then, must be as far back as physical science may enable us to go. The nearer we can approach the point where matter first appears, the better it will be for our apprehension of how eventually we came to be. The further we may peer into the ethereal depths of the creation's origins, the deeper also, beyond the things that appear, we may possibly penetrate into the mystery of our being and destiny. Anything that modern science may assure us to be true of the first motions and elements

from which have proceeded the things that are visible, may have some significance for our interpretation of the whole subsequent direction and end of evolution.

Recently physical science has pushed the limit of knowledge beyond the atom, which hitherto has been supposed to mark the last boundary of the world of matter, with nothing but cosmic ether beyond. Now between the ether of space and the atom another definite point of material form has been discovered, another fact further out on which science may find footing before knowledge stands facing the vast, formless unknown. The traditional atom has been dissociated into constituent elements, and the new physics starts with so-called electrons—the least particles of matter scientifically determined. Their existence is demonstrable; their trail can be traced and photographed as lines of vapor precipitated by their passage through an ingeniously prepared tube; but, though we thus know that they are, it is difficult to conceive what they are. They are supposed to have mass; we are informed that the "existence of masses which are much smaller than that of the smallest of the atoms of known substances has been demonstrated in the surest possible manner and by purely physical methods."[1] Rutherford estimates them at slow velocities as 1,700 times smaller than the atom of hydrogen.[2] Yet it is not certain how far this infinitesimal mass is more apparent than real. For, although it is measurable, it has been found to vary at different degrees of temperature, and hence it is inferred that in part at least it may be more apparent

[1] Righi, A., *Modern Theory of Physical Phenomena*, p. 127.

[2] *Radioactive Substances*, p. 618. The limit of microscopic vision is about the one-hundred-thousandth of an inch. "A molecule of hydrogen, composed of two atoms, is about one two-hundred-and-fifty-thousand-millionth part of an inch. About one thousand atoms are supposed to constitute a highly organized vital corpuscle. From 1,000 to 1,700 electrons are thought to compose an atom of hydrogen."—(*Am. Journal of Psychology*, April, 1908, p. 156.)

than real. Thus substantiality, as we ordinarily conceive of it, seems to vanish from the first estate of matter. Assuming the existence of the cosmic ether, and knowing the existence of these electrons, natural philosophy is confronted with the problem of the construction of ponderable matter from these imponderables or semi-imponderables. These infinitesimals are the beginnings of the creation. No science can tell by what travail of nature the first forms of matter were brought forth; yet by their unseen activities the worlds have been made. Here, then, with the appearance of these electrons out of a formless unknown, begins the line of questioning which we are to follow to the end. Now that the physicist has succeeded in catching in his laboratory this primeval form of matter, our interest lies in putting to it the old question: What sign showest thou? For one thing, these primal invisibles show an active aptitude for combination; and fitness for combination characterizes further the atoms charged with their attractions. In this elemental fitness for combination a sign is given. It is a mark of some structural possibility. But a hint, indeed, the structure of the atom may be of something greater that shall follow because it is; yet evidently these electrons have come to do something—they are here that more may be. Herein there lies the potency of a forming finite order out of an infinite formlessness.

A physicist introduces his exposition of the modern theory of physical phenomena with this significant remark: "The new theory may perhaps acquire not a little importance in the future even from the philosophic point of view, since it points out a new method of considering the structure of ponderable matter, and tends to bring back to a single origin all the phenomena of the physical world." [1] He observes, that is, an apparent tendency in the earliest appearance of matter—a sign of one source—

[1] Righi, A., *ibid.*, p. xiii.

a suggestion, at least, of monism, although not by itself alone an evidence of monotheism.

From such beginnings cosmic physics takes up the story of the making of the worlds. By means of mathematical symbols, from data obtained by instruments of precision, and with reasonable use of the scientific imagination it would write anew the genesis of the heavens and the earth. The spectroscope has taught the alphabet of the language of the skies. Some of its primitive constructive forms have been made out. The light from the stars brings some intelligible message; we know that they are formed of the same building materials of which the earth is made. It is now possible on a basis of scientific observations and calculations to construct plausible theories of the forces, the processes, the laws which have made the starry heavens and our habitable earth what they have become.[1] We need only glance, in passing, at this fascinating revelation of the way the worlds have been made. The science of inorganic evolution is as yet only in its infancy, and we are but beginning to discover how the elements were fashioned and the existing order of inorganic nature evolved. The distinctive character, which we notice, is the fitness for combination which from the elemental origins marks with increasing significance the development of material forms. The elements have acquired distinctive properties and valencies; they enter into further structural combinations; nature begins at once to weave them into varied and intricate patterns. Everything seems to have been brought into existence for further uses. We may question Clerk-Maxwell's oft-quoted sentence that the atoms have the characteristics of manufactured articles; but the earth in its final forming has the appearance of some vast assembling-room of well-fitted parts. At a certain time, in a definite position

[1] See Arrhenius, *Kosmische Physik* and *The Worlds in Making;* Lockyer, J. N., *Inorganic Development as Studied by Spectrum Analysis.*

in space, sustained by a balance of forces from interstellar space, our earth has acquired its determinate constitution and form, and then has shown itself to be possessed of a specific capacity for a further issue—its fertile fitness as the environment of life. It has gained being and form for something beyond itself. It has become means for an end. We do not know, but very likely at other points in space and in other periods of cosmic time an inorganic environment for the organic may have come to pass; but, however that may be, this we know: on this earth at last primeval forces have been so combined, numberless influences have been so harmonized, subtle attractions and radiant energies from the outlying infinitude so balanced and timed and caused to work together for good, that here living matter appears and a new order of being and realm of untold richness and promise has been established, the full fruition of which does not yet appear. Henceforth, from slightest germ, so frail that the least unfitness, the slightest discord in all this wondrous concord were enough to destroy it, life begins its wondrous history. The mystery deepens, and at the same time its possible significance increases, the moment we cross the boundary between the inorganic and the organic world. In the early part of the last century the living cell was discovered to be the common basis of all organic structure. As the atoms were regarded as the fundamental building stones of the inorganic, so the protoplasmic cells were considered to be the units of the organic world. But the cells, like the atoms, have shown themselves to be composite substances; and recent biology has discerned in the cells complex systems of chemical and physical properties and stresses. The simplest living particle that the microscope can bring to light contains a world within itself waiting for future science to conquer if it can. How this living particle ever originated on this earth no one knows. To some extent organic compounds may be produced in

the laboratories; the eggs of some lower organisms have been artificially activated, the process of their development started up and carried to a certain degree of normal growth. Some eager biologists deem it quite possible that some day science may succeed in transforming inorganic into living matter, and, indeed, that the evolution of non-living into living substance has happened more than once, and may be happening now;[1] but, at present, this possibility is as the alchemist's dream, and far beyond the achievement of our subtlest chemistry. It is not, indeed, a possibility to be denied; and should science ever discern the secret of life's origin in the womb of nature, that would be only another advance in our endeavor to find out by searching the ultimate Source of the whole wonder of the creation.

In the absence of knowledge several hypotheses of the origin of life have been ventured. One was the supposition that some living particles may have been wafted from other worlds, and, when the earth was ready, found here fertile soil for their germination. This hypothesis met the seemingly fatal objection that no living germ could have withstood the heat which its descent through our atmosphere might have engendered. Recently, however, Arrhenius has lent more plausibility to this conjecture as the result of his mathematical calculations and subsidiary hypotheses concerning the radiant forces which are now supposed to play throughout ethereal space. He holds it to be possible that the earth may have passed through multitudes of germs scattered through space, and that some of these living particles may have fallen undestroyed upon it. Thus all our life may have been the gift to us of other worlds more advanced than ours. More generally regarded as probable is the view that at some particular stage of the earth's development it was fitted for

[1] See Sir Edward A. Schäfer's address as president of the British Association for the Advancement of Science, 1912.

the spontaneous birth of life. Just the right temperature and conditions of chemical elements may have occurred, perhaps once for all time in the earth's history, when, as at no other moment, the great transformation may have occurred. If so, a prophetic sign would have then been given of a greater world-age about to come. The philosophic monist and the theistic believer might well wish that science might find, indeed, the way which nature has taken in crossing the apparently impassable gap between the inorganic and the organic, over which we can throw only slender hypotheses. At present the philosopher beholds the wonder of the whole world of life in a dot of living matter under the microscope, and he must ask: Whence and why its coming and its potency to make it a world for us? Did it from the beginning mean us?

At this point, then, in the pursuit of our inquiry we observe that form and fitness for something to be achieved constitute the double mystery of the first known beginning of things.

Note more critically what thus far has taken place; viz., the total resultant of one cycle of development, the inorganic, has become a fitness of things for another cycle of evolution, the organic. The one development has become environment for another. Somehow, somewhy, one order has so come to pass that another order may use it for its existence. This elemental sign of fitness for something other than itself has become a plain mark on the face of things. Hence biology does not begin with the cell; it runs back into the antecedent problem of the adaptation of the inorganic environment for the cell. Nature took ages in making the inorganic a womb for the birth of the organic. Whether or not this is fortuitous, whether or not this character of fitness is a mere by-product of mechanical forces, at this stage of our inquiry is obviously not to be determined; but this character itself is a fact in evidence. It is an original hall-mark on

the creation. The question at this point is not the survival of the fittest, but "the arrival of the fit."

Formerly this striking characteristic of nature, its constitutional adaptation to be the abode of life, was advanced as a signal evidence of intelligent design. The scientific knowledge of the day was used with much force in the famous series of Bridgewater Treatises to illustrate the "Power, Wisdom, and Goodness of God as manifested in the Creation." Whewell reasoned that "a great number of quantities and laws appear to have been *selected* in the construction of the universe; and that by the adjustments to each other of the magnitudes and laws thus selected, the constitution of the world is what we find it, and is fitted for the support of vegetables and animals in a manner in which it could not have been if the properties and quantities of the elements had been different from what they are." [1] But since Darwin this reasoning from construction directly to design and a Designer has been brought to a pause—not necessarily, indeed, to a full period; but a scientific parenthesis has been interposed between premise and conclusion. Before the significance which the Bridgewater Treatises attributed to these contrivances of nature can be admitted it must be shown further that mechanistic principles are not of themselves sufficient to account for them. The question also is raised whether other fortuitous combinations of the elements might not have proved available for organic ends. Since Darwinism has demonstrated some vast constructive power in the process of natural evolution, it is held that the presumption is changed from the side of an intelligent Artificer of the universe to that of its self-formative potentiality, at least if motion and matter be first assumed. Consequently, the point of view of the Bridgewater Treatises has been generally abandoned among sci-

[1] *Astronomy and General Physics Considered with Reference to Natural Theology*, 4th ed., pp. 141–143.

entific men, while this apparent character of the present fitness of environment to life has been taken for granted and neglected by biological writers. But, like all fundamental questions, this inquiry may be put off for a season, only to return again. It comes back to the philosophy of biology to-day in a new form: Is the principle of survival of the fittest a factor operative in inorganic evolution? Is it a principle sufficient to account for what we now know much better than the writers of the Bridgewater Treatises knew in their day concerning the physical and chemical properties of matter, and the specific adaptation of a few of their complex combinations to the subsequent evolution of living matter? Or on what mechanistic principle is this double fitness to be understood? Can a single factor or law be found, not merely to hold together two parallel developments, but to connect one antecedent, preparatory course with a subsequent course for which the first has value? We have in the development of the inorganic world what has been called "delayed utility"; the successive stages of inorganic evolution bear the broad mark of prospective utility. The prepared physical and chemical fitness of the environment for the advent of life on this earth is evident enough, and on any known mechanistic principles puzzling enough, to compel science to search more thoroughly for some common principle sufficient for both kinds and periods of evolution.

This problem has recently been taken up anew from a critical physico-chemical point of view by Professor L. J. Henderson, of Harvard, in a book bearing the suggestive title, *The Fitness of the Environment.* His method of attack upon the problem is new and illuminating. He simplifies the question and renders it more scientifically determinable by narrowing it to the three chief elementary conditions of matter as related to life, on the one hand, and three distinctive characters of life, on the other hand

—carbon, hydrogen, oxygen, with carbon compounds; and complexity, regulation, metabolism of life. He asks: "How does it come about that each and all of these many unique properties should be favorable to the organic mechanism, should fit the universe for life? And for the answer to this question existing knowledge provides, I believe, no clew" (p. 278). "The two fitnesses are complementary; are they, then, single or dual in origin? The simple view would be to imagine one common impulse operating on all matter, inorganic and organic, through all stages of its evolution, in all its states and forms, and leading to worlds like our own through paths apparently purposeful and really not yet explained" (p. 299). He excludes mere contingency in his endeavor to find the formative principle of the fitness of the environment. "There is, in truth," he observes, "not one chance in countless millions of millions that the many unique properties of carbon, hydrogen, and oxygen, and especially of their stable compounds, water and carbonic acid, which chiefly make up the atmosphere of a new planet, should simultaneously occur in three elements otherwise than through the operation of a natural law which somehow connects them together. There is no greater probability that these unique properties should be without due cause uniquely favorable to the organic mechanism. These are no mere accidents; an explanation is to seek. It must be admitted, however, that no explanation is at hand" (p. 276). Excluding ordinary teleology as "a dangerous doctrine in science," he says: "Nevertheless, biological science has not been able to escape the recognition of a natural formative tendency, which Darwin identified as the result of natural selection. And now it appears to be necessary to postulate a like tendency in the evolution of inorganic nature" (p. 280). "The perfect induction of physical science, based upon each and all of its countless successes in every department of physics and chemis-

try, conclusively proves that the whole process of cosmic evolution from its earliest conceivable state to the present is pure mechanism" (p. 304). "On the other hand, it is conceivable that a tendency should work parallel with mechanism, without interfering with it," etc. (p. 306). "Matter and energy have an original property, assuredly not by chance, which organizes the universe in space and time. . . . Given the universe, life, and the tendency" (*i. e.*, teleological), "mechanism is inductively proved sufficient to account for all phenomena" (p. 308). Thus we are brought back to Lotze's maxim: "How universal is the extent and how little is the significance of mechanism in nature!" This "tendency" is a mark, which we thus hit at the very beginning of the trail, which we must seek to follow through nature.

Descartes, who was both philosopher and physicist, sought to explain mechanically all physical phenomena, including the life of plants and animals; he denied the vital principle attributed to them by Aristotle. During the three centuries now nearly passed since his day the controversy has been repeatedly renewed. No sooner does the one view appear to triumph than the other in a new form returns to the field. The hypothesis of a special vital force is exploded; but Driesch brings back Aristotle's "entelechies" in full array into the field once more. In the hour of the apparent subjection of the entire known field of organic phenomena to mechanism, the new vitalism returns to the charge and asserts the dominion of some higher factor of organic evolution. On either side an array of names eminent in science and natural philosophy might be mentioned; at present the philosophy of nature is as a house divided against itself. Some issues, however, have been cleared up; and as a result of the prolonged discussion and research we may draw a twofold conclusion. On the one hand, vital phenomena, one after another, have been investigated on mechanical principles

and their mechanical actions and reactions with more or less probability determined. Some vital phenomena still elude mathematical exploitation; they are not calculable as yet in terms of physico-chemical quantities and motions. But undeniably it is no small part of the great achievement of modern science that it has unravelled the intricacies of many vital processes, and demonstrated laws of mechanics in the order of the organic world. At the same time it must be admitted that some phases of living matter are still inexplicable on mechanical principles, although the failure to account for them may be attributed by mechanistic thinkers to the partialness of our knowledge. The origin of living from non-living matter remains as much as ever a secret hidden in the depths of long-past conditions. Some characters of life appear to be distinctive vital responses; as, for instance, certain tropisms of unicellular organisms, notwithstanding Professor Loeb's inferences from his researches. Other phenomena of self-regeneration, of responsive organic actions to organic needs, varying with environmental conditions, as well as the capacity to learn by trial and error, and the rudiments of the growth of instinctive behavior present vital qualities that are not quantitatively measurable in terms merely of known mechanical relations. But on the whole it is to be admitted that living matter has been made subject to the same laws, and is a constituent part of the same order as the chemical elements and the molecular motions of which it is formed and amid which it lives.

On the other hand, this very reduction of the organic realm to natural law and order has opened the way for the philosophical view that both inorganic and organic evolution are parts and moments of one comprehensive process, and are continuous in and through some universal principle or power. The success of our knowledge of the mechanics of nature is itself the failure of a purely mechanical interpretation of nature, for some reason in it and

for it would seem to be required; and at the end of demonstration of the extent of the mechanical, scientific research comes to a full pause before the unknowable. It cannot be affirmed that mechanism, however extensive throughout nature, is sufficient to account for itself, or explains ultimately either matter or life. We are left with what may be called the biological paradox: living matter is mechanically constituted; but mechanism is not all that is given in living matter.

We have not to do with an abstract conception of life; it is the actuality of living matter that is immediately presented in our experience of the world. At this stage of our inquiry our single and persistent question of meaning stands as an interrogation-point after each biologically determined phase and factor of organic development; and it is to be raised as a final question, pressing for answer, at the close of the whole evolution and achievement of life.[1]

Two general considerations must suffice at this preliminary period of our search for the meaning of nature.

1. Supposing that the entire mechanism of organic structure and functioning should have been scientifically mastered, the greater rather than less would the resultant problem become: How is such functioning itself as an accomplished result in nature to be understood? How is the existing relationship of the parts to the whole as well as the "sympathetic rapport," the actual co-working of the parts, to be regarded? Whether or not these adaptations and mutual relations of things were designed for use, they certainly have use, and to good purpose; nature has become a realm of organic ends, however these correlations and utilities were attained.

[1] As the present writer in a previous volume has pursued this line of questioning across the biological field, we pass with only a cursory glance over this preliminary part of our inquiry. See my *Through Science to Faith.* Additional facts have accumulated since that volume was written, but the main argument there pursued the author believes has not essentially been modified by subsequent advances in biological research.

This question is only half put when defined as a problem of statics, of parts, that is, simply considered as forms fitted to some common structure and end. It is a question not merely of the mechanism, but of its working; not simply of the *lived*, but of the *living*. It is nature in action, in the action of mutually serviceable parts, producing results of organic utility, conducive to ends worth reaching, and attaining as the final result individual life well worth living—it is with this larger and profounder problem of ultimate meanings that we have to do. Granting that the scientific investigator should confine himself to the determination of the actual processes and facts of behavior without regard to their ends; admitting that for strictly scientific research Lord Bacon's saying must be regarded that final causes are like vestal virgins, who are dedicated to God but barren; nevertheless these fruitful results of nature have come to pass, these final utilities have come to the birth. These living functions work together for good; the ends that have been organically reached constitute for us the significance of the world.

2. Surveying broadly the facts that distinctively characterize living matter, we observe what appears to be a certain formative tendency in organic development. This appearance frequently impresses itself upon students of biology. The rôle of natural selection as an efficient formative agency is found to have its limits; it is indirectly rather than positively constructive of specific forms; it destroys that life may be fulfilled. Other factors are to be sought for in determinate evolution, for, as a matter of fact, evolution has been determinate. It has followed lines of definite descent; by many means it has given specific forms to things. The Neo-Darwinian views do not, indeed, invalidate Darwin's verification of the influence of natural selection; they supplement it while they confirm it. De Vries's

primroses show sudden mutations; this indicates that variations are not necessarily minute changes in an indefinite number of possible directions. The problem of determinate variation is essentially a dynamic problem; and a negative explanation is not sufficient for a positive potency in nature. That keen scientific teacher, Du Bois-Reymond, cannot escape this impression; he says: "It is impossible to avoid assumptions of formative laws in some cases of healing."[1] Similarly T. H. Morgan, as a result of his studies of regeneration among lower organisms, is led to recognize something more included in these processes than can be explained by known chemical or physical properties of matter, something that "appeared as though guided by intelligence."[2] Both sides, the mechanistic account and the neo-vitalistic, are fairly presented in J. S. Haldane's *Mechanism, Life, and Personality*. He holds that "the position of the vitalists is wholly unsatisfactory; but it does not follow from this that the mechanists are right; and those engaged in the observation of living organisms can hardly escape feeling an instinctive distrust of the mechanistic theory, in spite of the confidence with which it has been urged upon the world during the last fifty years. Somehow or other a living organism never *seems* to be a mechanism, however often it may be called one. The closer the examination, the more confirmed does this impression become," etc. (p. 31).

We would not, however, jump from a biological standpoint to a metaphysical conclusion. We are not affirming that a positive potency or tendency toward some end is biologically to be demonstrated; we are not now asking what can be proved, but simply at this point what may possibly be indicated, or left for further evidence to be verified. Biological science at present has no com-

[1] *Reden*, vol. I, p. 291.
[2] *Biological Lectures Wood's Holl*, 1899, p. 205.

plete and demonstrable theory of heredity. Some factors in it have been brought to light, some laws probably determined. There is much to be learned as to a positive or driving principle of evolution. We receive from genetic biology as yet only signs of direction or determinate tendencies in the ascent of life, the full meaning of which we must search further to find out, if we can. At this stage of our argument it is enough to say that all the indications, taken together, seem to point beyond the mechanical toward some higher principle to be revealed.

Over against a too-easy contentment with the experimental mechanics of life, there is enough in the considerations which we have thus far adduced to justify the lifting up of the idealist's view as at least a possible perception of the reality: "Look upon all these things descriptively, and you shall see nothing but matter moving instant after instant, each instant containing in its full description the necessity of passing over into the next. Nowhere will there be, for descriptive science, any genuine novelty or any discontinuity admissible. But look at the whole appreciatively, historically, synthetically, as a musician listens to a symphony, as a spectator watches a drama. Now you shall seem to have seen, in phenomenal form, a story."[1]

Physical science introduces the beginning of a story, which biology continues.

Its following chapters we are to peruse in the development of personal life. To these we now turn. The opening chapters of the story of nature are to be interpreted by the closing pages of its history.

[1] Royce, *The Spirit of Modern Philosophy*, p. 425.

NOTE ON LOEB'S MECHANISTIC VIEW OF THE UNIVERSE

Professor Loeb would have us hold nothing beyond a laboratory apprehension of the world, ourselves included. Anything within the whole compass of human experience which cannot be quantitatively determined is for him so much "metaphysical romance." He disposes easily of the whole biological problem of the harmonious character of life. He writes: "We must, however, settle a question which offers itself not only to the layman but also to every biologist, namely: How shall we conceive that wonderful adaptation of each part to the whole, by which an organism becomes possible?" He regards the efforts of the authors of such terms as "dealing here, as in all cases of metaphysics, with a play on words." He settles the problem summarily, and without any play on words, by the simple statement that the phenomena of "adaptation cause only apparent difficulties since we rarely or never become aware of the numerous faultily constructed organisms which appear in nature." That there may be a countless number of such failures of ill-adapted organisms, and only a few chance hits, he has no difficulty in rendering plausible by his experiments in the hybridization of marine bony fishes. There are, he says, 10,000 such teleosts in existence, and all possible crosses would amount to 100,000,000. Embryos which he produced artificially in a pure breed of bony fish were identical in every detail with embryos produced by crosses of the same fish; they had heart and lungs, but no circulation, and their lack of adaptation was simply for the reason that the chemical differences between the heterogeneous sperm and egg resulted in abnormal chemical processes. From all this it is easy for Loeb to see that the exceptionally harmonically developed systems are the only ones of a large number that we perceive, and so "we gain the erroneous impression that the adaptation of parts to the plan of the whole is a general and specific characteristic of animal nature, whereby the latter differs from inanimate nature." He thinks, and with some plausibility, that if we knew intimately the mechanism of the atoms, we should find that there also "the chemical elements are only few dura-

ble systems among a large number of possible but not durable combinations."

From these assumptions, putting away as nothing worth mentioning all the metaphysics of the ages, he brushes aside the whole question with his sweeping assertion: "Nobody doubts that the durable chemical elements are only the product of blind forces. There is no reason for conceiving otherwise the durable systems in living matter" (pp. 24–26). We may accept Loeb's reasoning so far as it consists in putting together the two parts of nature, the animate and the inanimate, and then raising the question of them both whether "blind forces" are sufficient to account for either of them. But this inquiry of both would not be a mere play on words; it is a question of his assumptions as "romantic" science; and it is also a rational interrogation of the metaphysical presumptions, on which, apparently unconsciously to Professor Loeb, his mechanistic theory of the world, and ourselves in it, is based. But unconscious or sub-conscious metaphysics is apt to be poor metaphysics. (See a discriminating discussion of the mechanical theory of models —such as Loeb's—and of the use both of concrete representations and of mental concepts in physics, in a recent volume by Professor Aliotta, *The Idealistic Reaction Against Science*, chap. V.)

Loeb's confidence in his successful experiments and his unconscious metaphysics carry him so far that he believes not only that the nature of the living cell, but also the contents of the inner life, will eventually become amenable to a physico-chemical analysis (p. 26). He bases this belief on the fact that it is already possible for us to explain cases of simple manifestations of animal instincts on a physico-chemical basis. He asserts that we may now safely state that the apparent will or instinct of heliotropic animals "resolves itself into a modification of the action of the muscles through the influence of light; and for the metaphysical term of 'will' we may in these instances safely substitute the chemical term 'photo-chemical action of light'" (p. 30). Thus all the higher life of humanity—social, ethical, religious—is reduced by a single bold stroke to the flight of moths toward a flame or the gathering of a number of plant-lice in the end of a tube turned to the light. And

Professor Loeb hastens to assure us that "not only is the mechanistic conception of life compatible with ethics; it seems the only conception of life which can lead to an understanding of the source of ethics" (p. 31). Later on we shall have occasion to inquire how judgments of vital values can be thus developed from organic tropisms; we leave the matter here with the conclusion that it is too great a tax upon human experience to accept the light of Professor Loeb's laboratory as indeed the light of all our seeing.

CHAPTER II

BEGINNINGS OF MIND IN NATURE

We become aware of ourselves as personal entities of some kind. But what is our life? Of what elements is it formed, and whence is the continuous flow of personal life? We find ourselves existing in the midst of things, around us a great world of sight and sense, ourselves a part of all that we touch and see. So far as appears at first thought we are natural results of the whole of nature. Not immediately at birth, but gradually—we cannot remember when—we learned to distinguish ourselves from the world into which without any knowledge or consent of ours we came. But we have found ourselves in time discriminated very definitely and intensely from all the rest of nature—our little spheres of personal life self-centred and self-defined in the midst of a limitless universe—our life within ourselves not to be broken down or flooded out by the forces that beat from all sides upon it, and against which it persistently reacts. What does this personal energy disclose of its source and quality? From what it does may we understand what it is? How are we to conceive of its relations as a force in a universe of forces? Such is the old question of the soul concerning itself put in the terms of modern thought. Nature and self are both given in our conscious life: how are we to conceive of them both as they are given to us in our personal experience?

In the preceding chapter we have noticed the tendency of natural science to sublimate matter. The scientific conception of it transcends the indivisible atoms, etherealizes, electrifies, strips of the vestiges of sensible materi-

ality the external world, to leave us at length, not indeed in a world of disembodied spirits, but in a realm of mathematical positions and equations, of electrons disembodied from the molecules, and of vibrations throughout a hypothetical medium impossible of representation in sensible imagery. Nevertheless, this scientific knowledge, which divests matter of the commonly received ideas of substantial existence, by no means leaves it robbed of wondrous potencies of organic life. It is suspected that mind is rudimentary in nature. Before man's members were fashioned, before the higher animals with brains anticipatory of man's existed—earlier than the primitive differentiation of nerve-cells and acquisition of definite points of sense-perception—even in the behavior of simple, sensitive protozoa, and, so some botanists (as Francis Darwin) make bold to say, at the apex of the root of a plant, premonitions of intelligent action are to be surmised; indications at least are discerned of a tendency to use trial methods in the struggle for existence, and of a fundamental capacity in living things to learn how to react in such ways that they may continue to live and to form also habits of organic conservation.[1] A certain vital character of educability may be regarded as a natal gift and promise of the organic world. We keep within the limits of observation, and do not venture too far into speculative interpretations of animal behavior when we assume that matter and mind did not begin to be on this earth as two opposing factors of evolution. The kingdom of embodied mind, to which man has come, was not from the beginning a divided kingdom; mutual fitness and progressive adaptation have been from the first characteristic of the co-evolution of body and soul. The developed dualism, which we discover in our conscious life (of which animal life beneath us may be unconscious), is not a primary and irreconcilable antithesis of nature. It is

[1] See Calkins, G. A., *Protozoa*, p. 279.

late in coming to recognition in the natural history of mind. Genetic psychology may assure us that we are not compelled to hold any preconceived philosophic ideas of an original and necessary dualism between matter and mind, and consequently of some parallel but independent development of both; on the contrary, in the course of evolution we may discover an increasing differentiation between material sequences and mental action, and hence are free to follow to its ultimate rational conclusion the natural history of the dominance of mind. We shall gain no better assurance of the final distinction and supremacy of mind in nature by despising its humble origins, or denying its earliest awakening and age-long course of education.[1] By isolating the self primarily from nature we do not finally unite it with God. The question when and where and how intelligence first became the dominant and directive factor of life is purely a question of fact; and here the biologists have opened an interesting field of inquiry, which has as yet been explored only around its borders.

The physical structure for the higher mental activities has been gradually acquired in the nervous system. Some account, then, of its development and functioning (although quite general and untechnical) is necessary for our further inquiry.[2]

In some of the lowest organisms, consisting of a single cell, an elementary nervous conductivity may be discerned; as in the *Vorticella*, for example, which may be watched under the microscope as it alternately expands or withdraws its pretty fringed bell at the free end of a slender stem. It is only a little microscopic cell; but that has been differentiated into three functional parts; a re-

[1] One botanist, Nolle, goes so far as to speak of what he names *Morphesthesia*, or "the feeling for form" in plants, as in *Siphonia*, an order of marine algæ. Cited by Driesch, *Science and Philosophy of the Organism*, p. 157.

[2] The standard work on this subject is Sherrington's book on *The Integrative Action of the Nervous System*, Scribners, 1906.

ceptor (the ciliated peristome) at the free end of the cell; an effector (its contractive element) at the fixed end; and the conductive intermediate part. A stimulus reaching it at the free end is transmitted through the protoplasm of the cell to the other end of the cell, and the expansion or contraction follows. This triune differentiation into receptors, effectors, and conductors is fundamental in the nervous system. The next stage, however, in the development of the nervous system does not consist, as might have been expected, in the continuation of this differentiation of functions within a single cell. On the contrary, a new method is introduced; the conductor, in the nervous system of more developed organisms (in a simple reflex arc), is a separate cell interposed between a receptive and effective cell. And different receptors through conductive ramifications (which I will not describe in detail) may act upon the same motor neurones and by this means stimuli at a number of sensitive receptive points may be combined in a joint effective response. Also at the other, the effector end, the minute branching of the conductor places it in touch with many effective cells. This simple nerve pattern renders possible the development of the complex nervous system. The mechanism of conjoint and interlacing neurones (nerve-cells) provides for a gathering together of stimuli from different points and their summation in a common effect, and also secures a more effective reaction through a final common path in contact at its end-filaments with many cells of glands and muscles. In this way the organism becomes more quickly and effectively responsive to its environment.

Now, this change in method of organization from the primitive differentiation of the *Vorticella* to the multicellular and ramified nervous structure of an organism possessing a proper nervous system, may seem to have been but a slight transition and a step easily accomplished;

but it is just at such short steps and slight advances that purely mechanical interpretations of evolution are brought to a halt by the questions, how? and why? which the philosopher of nature interposes. Whatever reasons we may find to account for it, this fact itself is of far-reaching import; the length of the conductor includes at least originally two neurones in succession, and upon the reflex arc so constituted is securely laid the foundation of the whole subsequent structure and marvellous integration of the complex nervous organization that exists in the higher animals and is found waiting for mental use and control in man.[1] How, then, or with what adaptive stimulation, the natural philosopher must ask, was that mutation brought about?

The further development to be accounted for may be stated in general as follows: The simpler forms of nervous organization consist of scattered mechanisms quite independent in their action except as they may have contact with similar neighboring groups. It is a diffuse rather than a centralized nervous organization. In the higher animals a system of longer and direct nerve connections has been developed; it is technically known as the "synaptic system"; that is, it is composed of nerve-cells which have at their surfaces adjustable junctions

[1] Mr. Sherrington adds to his account of this mechanism the remark: "But—and it is a striking fact—we do not know of any reflex arc in which in fact the nervous conductor, connecting receptor to effector, is formed from end to end of one single neurone. The length of the conductor seems always to include *at least* two neurones in succession." Such arrangements as *Vorticella*, and others, he says, "do not exhibit the germ of a feature that we have already considered fundamental in the construction of the reflex nervous system. The cases cited do not exhibit even in germ the co-ordinative mechanism which is attained by the principle of the *common path*" (p. 310). Moreover, through this arrangement of several conjoint neurones not only summations of stimuli or common paths of stimulation become possible, but also another power equally fundamental is gained—that of inhibition or the capacity of counteraction between different stimuli, "the two great co-ordinative processes of *pluri-receptive summation* and of *interference*" (pp. 310–311).

with one another. This system has as its distinctive feature a central nervous organization through which distant parts of the body may be brought into co-ordination, different organs may be rung up. The central nervous system may be described as the meeting-place and clearing-house of the nervous paths and exchanges from the peripheral and deeper-seated organs of the body. Single nerve-paths at the start may converge into common paths toward the central organ; and from it stimulations, which come up from the exterior, are sent through a final common path to the motor-organs. Some further characteristics of this nervous integration, which are elucidated in Mr. Sherrington's masterly treatise, remain to be noticed as having significance for the interpretation of intelligent life.

One is the interesting question raised by the observation that several nervous factors may be combined in a single stimulation; as, for instance, the two images in the left and right eye are fused in one perception. Sherrington, as a result of much ingenious experimentation, has reached the conclusion that spatial fusion of these visual sensations is not necessary, only their co-existence in time. He questions the hypothesis that "if we could unite the brains of two human beings by a path of communication equivalent to cerebral fibres, both would have no longer *two* but one consciousness." He says: "Pure conjunction in time without necessarily cerebral conjunction in space lies at the root of the solution of the problem of the unity of mind."[1] We shall recur later on to this conclusion and its further significance. We note in passing the break in the purely mechanical theory of mental action which is made by the absence of any necessary spatial junction in this process of sense-perception. For the non-spatial co-ordination, which Sherrington assumes, working qualitatively in time, but not quantitatively in

[1] *Ibid.*, p. 384.

space, is not merely mechanical, whatever else it may be.[1] The fact of such co-ordination and timing of energy cannot be fitted, without violence, into a purely spatial conception of mental action.

Another question, which Sherrington's investigations raise, should here be noticed. Physiology teaches that consciousness is adjunct to the nerve-centres which exert control over the actions of the organism, and the primary function of consciousness is their control. In a mere automaton consciousness would seem to be useless. In the higher animals "the reactions of reflex arcs are controllable by mechanisms to whose activity consciousness is adjunct." Control through the higher cerebral centres of reflex actions is complicated by the fact that "by these higher centres, this or that reflex can be checked or released, or modified in its reaction with such variety and seeming independence of external stimuli that the existence of a spontaneous internal process expressed as 'will' is the naïve inference drawn." Looking at it purely from the physiological side, without raising the question as to the "spring" of this action, Sherrington says: "It is urgently necessary for physiology to know *how* this control—volitional control—is *operative* upon reflexes, that is, how it intrudes and makes its influence felt upon the running of the reflex machinery. How is the cough, or eye-closure, or the impulse to smile suppressed?" (p. 388). He adds: "Certain it is that if we study the process by which in ourselves this control over reflex action is acquired by an individual, psychical factors loom large, and more is known of them than of the purely physiological *modus operadni* involved in the attainment of the control" (p. 390).

[1] Not mechanical if we adhere to Kirchoff's definition of mechanics, which as Merz rightly observed marks an era in scientific thought: "Mechanics is the science of motion; we define her task: to describe completely and in the simplest manner the actions which take place in nature." This fusion above described is not of motions in space, but a synthesis of events in time.

Without entering further into the details of the structure of the nervous system, which are to be found in the physiological text-books, the sketch just given of some of its most striking mechanisms and functions is sufficient to open before us several interesting inquiries, if we are to search for a rational interpretation of its genesis and working. How, we must ask, without some psychic action are sense-stimuli (such as those mentioned by Sherrington) fused in visual perception? How is voluntary control over convergence of the eyeballs, for instance, independently of the stimulus of fixation on a near object initiated? How are chemical and mechanical stimuli compounded in one nerve-impulse? Granting that, if we had more knowledge of physiological subtleties, such special integrations might conceivably be explained without the interposition of any psychic action, a more fundamental question, underlying the whole organization of the nervous system, remains: How and under what influence, for what occasion, if for any, was the first, all-decisive step taken from the diffuse undifferentiated matter of life in the primitive single cell to definitely formed nerve-conductors, differentiated into at least two cells, and thereby a new beginning made of an intricate network of reflex actions and interactions? Grant that the process of construction and reconstruction was a continuous evolution; admit that existing conditions were enough (could we know them all) to account for the transformation of a single protoplasmic cell, which did not contain, into two neurones which did contain, the germ of a future complicated nervous organization; among those existing conditions was there any formative factor? Or was this only a lucky hit? Or, again, if contingency is to be excluded from a world of order, and if the primal necessity of living matter to keep itself alive be assumed among the first principles of evolution, the question is only pushed back: Whence the necessity of surviving and consequently of

vital selection of forms best fitted for survival? Was that a fortuitous necessity? The wonderfully developed nervous system is indeed simple in its fundamental principle. "The edifice of the whole central nervous system," says Sherrington, "is reared upon two neurones—the afferent root-cell and the efferent root-cell. These form the pillars of a fundamental reflex arch. And on the junction between these two are superposed and functionally set, mediately or immediately, all the other neural arcs, even those of the cortex of the cerebrum itself" (p. 319). How, then, did it ever happen that these two fundamental pillars were fashioned and put exactly into position, so that upon them might be built the whole nervous framework of the highest and most capacious life even of man himself? Wherefore was it inevitable that this must be as it has become? What has forced chaos to take any form, and at length such form as the nerve-arc on which this complicated structure has been built? Thus at the beginning of our modern physiological knowledge of ourselves Aristotle's problem of matter and form meets us again, and waits for solution. Some answer to it must be found, if we are to reach any rational interpretation of our life. We know far better than the ancients that in the course of evolution an undifferentiated nervous matter—a formless nerve something—has become differentiated in the neural organization; but Aristotle might well inquire of our science. What have been the formative principles of this order of evolution? Certainly the first steps of nervous organization have led to momentous results. We leave these initial questions unanswered as suggestive possibilities of further meanings to be found along the way of ascending life.

Before turning, however, to introspective psychology we have to inquire next what physiological psychology has ascertained concerning the interesting border-land that

lies between purely physical and clearly intelligent action —the instinctive side of life. This intermediate region in the development of intelligence has of late years been industriously explored and with improved methods of investigation. Much effort has been made to understand better the animal mind beneath us. By comparison of different degrees of seemingly intelligent behavior in the animal world it is sought to trace more definitely the way through which human intelligence has been acquired, and the ultimate worth of mind in nature attained.

With the earliest beginnings of nervous differentiation habits of reaction become possible, and step by step with increasing organization instincts useful to life are formed and inherited. In recent studies of habit and instinct, two methods of investigation have been pursued—the observational and the experimental. The behavior of animals has been scientifically watched, and recorded with careful precision; and so far as possible the observations have been experimentally repeated, varied, and tested for the purpose of verification and valuation. But as no animal can speak in our language, in whatever tongues they may call to one another, insight into their mental life can only be gained through reflection back upon their behavior of our own intelligent conduct. Herein lies the wide-open possibility of misunderstandings of the animal mind, and hence likewise of mistaking the way through instinctive behavior to the final attainment of human intelligence.

As animal instinct is the forerunner of intelligence, so the precursor of instinct is the primitive capacity of an organism to become modified in adaptive response to environment. Hence some biologists are inclined to place the primary roots of instinct in the constitutional activities of protoplasm, and to regard instinct at every stage of its evolution as depending essentially on organization. Indeed it is doubtful whether at any point on the scale of

life we can say that it is an absolute psychic zero. We are told by close observers of the behavior of unicellular organisms, such as paramecium, that the organism "reacts as an individual, not as a substance"; and that even in very low forms of life something like organic habits may be discerned.

Two views of the genesis of animal instinct have been held, with many variations between them—the selective theory of Darwin and the Neo-Darwinians, and the habit theory of the Lamarckians. Possibly some modification of the two may prove to be the result of this prolonged biological discussion. At present some theory of germ modification rather than immediate transmission of acquired habits seems preferable; but in the statements above, it is not necessary for our interpretative purpose to enter into this disputed region. Lloyd Morgan restricts "the term instinctive in its biological acceptation to congenital modes of behavior dependent upon inherited dispositions within the lower brain centres." Professor Stout criticises Morgan's view of the origin of instinct on the ground that some intelligence, however vague, must be involved in learning by experience. "Intelligence must accompany every instinctive act which leads to intelligent modification of behavior or its repetition in a similar situation."[1] Similarly Doctor C. S. Meyers regards the separation of instinct and intelligence as "a purely artificial abstraction."[2] McDougall contends that "instincts are more than innate tendencies or dispositions to certain kinds of movement. There is every reason to believe that even the most purely instinctive action is the outcome of a distinctly mental process, one that is incapable of being described in purely mechanical terms, because it is a psycho-physical process," etc.[3] So

[1] *Analytical Psychology*, pp. 237 *seq.*
[2] *British Journal of Psychology*, vol. III, pp. 209, 270.
[3] *Introduction to Social Psychology*, p. 26.

Wundt likewise defines instincts: "Movements which originally followed upon simple or compound voluntary acts, but which have become wholly or partly mechanized in the course of individual life or of generic evolution, we term instinctive actions." [1] Does not the variance between these views of instinct result from the difficulty here as elsewhere in nature of drawing arbitrary lines across the process of evolution, of determining just where or how the reflex process passes over into the process of learning; or what initial preperception, as Morgan would say, may be the beginning of individual experience and of intelligent modification of congenital modes of behavior? In any case, somewhere, somehow, the psychic factor must have entered and become directive of conduct and formative of habit.

A curious illustration of the capacity of living matter to assume an organic form of reaction (which might be regarded as instinctive habit) is furnished by a species of small flatworms (*Convoluta rosocffensis*) which exist in large numbers off the coast of Brittany. Just above the water-line as the tide rises they sink in the sand, and so escape being washed away; when the tide ebbs they creep up and begin to appear on the surface again. "If the worms are removed to an aquarium, where the tide no longer acts upon them, they continue to go downward at the period of high tide, upward at the period of low tide. This continues for about two weeks, so that the worms may be carried far away from shore, and used for a time as tide indicators." [2] This rhythmic alternation of movement has become a protoplasmic habit.

The common opinion that instinct was given to animals for their protection as a ready-made gift of creation, as well as the view that instincts are so much lapsed intelligence, are not scientifically tenable. Animal instinct can

[1] *Lectures on Human and Animal Psychology*, tr., p. 388.
[2] H. S. Jennings, *Behavior of the Lower Organisms*, p. 255.

no longer be adduced as *direct* evidence of "the guidance of the Almighty's hand unseen." There is guidance, to be sure, in instinct, and the hand that guides is unseen; no microscope can render its touch visible. But instinct is known to be an acquired organic aptitude; and, while a wide separation exists between reasoned conduct and the most seemingly intelligent instinctive behavior, nevertheless here as elsewhere in the development of mind nature knows no impassable gulf; no absolute breaks of continuity can be said to occur in "creative evolution." Instinct as scientifically known is a primary mode of action unmodified by individual experience, corresponding to an inherited compound reflex. Instinct is regarded by some authorities as a relation between structure and function; as the evolution, for instance, of the wings of a bird and the use of them in flying have proceeded together. According to this view it is nothing but the specific function of a definite inherited structure. It is "the response of inherited structure to stimulus." It is thus closely related to a reflex act of the nervous system. It is not, however, a single reflex act, but a definite combination of reflex acts, which has been selectively acquired in adaptation to vital needs; this adaptive combination of reflexes is the elementary and specific character of all instinctive actions properly so called. We may accept as a comprehensive description of instinctive action from the biological point of view the following summary from Mr. Morgan's work on *Habit and Instinct:* "Instincts are congenital, adaptive, and coordinated activities of relative complexity, and involving the behavior of the organism as a whole. They are not characteristic of individuals as such, but are similarly performed by all like members of the same more or less restricted group, under circumstances which are either of frequent recurrence or are vitally essential to the continuance of the race. While they are, broadly speaking,

constant in character, they are subject to variations analogous to that found in organic structures. They are often periodic in development and serial in character. They are to be distinguished from habits which owe their definiteness to individual acquisition and the repetition of individual performance" (p. 27).

One cannot infer at once from the seeming intelligence of some animal actions that the animal possesses a specific capacity of intelligent self-direction. For numerous instances are given of seemingly intelligent acts of bees and wasps, which, on the other hand, are observed to act in utterly stupid and purposeless ways. Morgan gives an account of a beetle which, on being unable to roll its ball before it up a hollow, went to work and "butted down the sand at one side of the hollow so as to produce an isolated plane of much less angle." [1] That was a good piece of engineering work. But these same beetles, which will help each other push their balls before them, at breeding-time fail to distinguish between different particles, and will roll any small balls of wood or stone into their store. Mr. Hobhouse remarks that this contrast of dull and hopelessly irrational uniformity with highly adaptive contrivances remains the most remarkable feature of insect economy.

The ultimate distinction between pure instinct and intelligence is sufficiently obvious, and the process of suffusing instinct with intelligence, of its "intelligent variation and modification" may be quite well traced until its final control by intelligence becomes dominant. But it is difficult biologically to say just where the one kind of action passes over into the other; as difficult, indeed, as it is to draw the line between animal and plant life in the earliest organic forms. Here also the continuities of nature are too deep for our logical definitions. Our abstract classifications are artificial distinctions necessary for our

[1] *Animal Life*, p. 368.

conceptual map of nature (as our degrees of latitude and longitude); but they are not actual separations in the real unity and flow of evolution. Yet as resultant facts and features of the existing creation and its one creative process they are true discriminations and correspond to nature.

The account which has thus been given raises the interesting question how far, if at all, instinctive action may be regarded as accompanied by consciousness. Mr. Morgan thinks that "intelligent experience as distinguished from instinctive action arises as soon as the higher brain-centres are called into activity and play down upon and modify processes of the subcortical centres." At the first peck of a chick a certain sentience without conscious guidance may exist; but repeated pecks and the constant habit of pecking involve what he distinguishes as "effective consciousness," by which the automatic instinct of a chick in its first response to the organic need and stimulus of food is guided. For the chick learns through experience to guide to better effect its instinct; and experience implies consciousness enough to hold in one act a past and present response. The activities of the chick are guided through experience to further perfection; consequently the automatic response gives rise to consciousness in the light of which the chick's future activities may be guided and controlled.[1] By effective consciousness he means "that which enables an animal to guide its action in the light of previous experience." Different degrees, also, or planes of consciousness may be supposed accompanying successive stages of the development of instinct and experience.

A radically different view of instinct has been presented by Bergson in his *Creative Evolution*. He agrees so far with the current theories as to suppose that instinct and intelligence have a common organic origin, and that in

[1] *Habit and Instinct*, p. 127.

concrete instances both are more or less interfused. But he has put forward the brilliant speculation that they indicate two divergent lines on which evolution has proceeded. The same impulse of life moves through both; but in the way of instinct it became blocked, and could go no further in that way when it had reached the perfection of instinctive action in the most finely wrought instincts of animal life. It proved impossible to attain in this way the goal of free, self-determinative life. The creative evolutionary impulse or energy, not to be baffled, tries another way; along the path of vertebrate structure and increasing dominance of the central organs—the dominant brain—it moves on toward an indeterminate life, not bound in a mechanical necessity, self-creative, self-impelling, self-conscious; such a dynamic life as is ever realizing itself in the flow of our free action. Vegetative torpor, instinct, and intelligence he regards as the "elements that coincided in the vital impulsion common to plants and animals, and which, in the course of development in which the elements were made manifest in the most unforeseen forms, have been dissociated by the very fact of their growth. The cardinal error which, from Aristotle onward, has vitiated most of the philosophies of nature is to see in vegetative, instinctive, and rational life three successive stages of the development of one and the same tendency, whereas they are three divergent directions of an activity that has split up as it grew." This speculation of Bergson finds some support in the striking fact that instinct has attained its finest development along the line of the *Arthropoda* and is carried to its culminating point in insects, as in bees, while life has climbed up to intelligence along the vertebrate line and attained its summit in the brain of man. It is noteworthy that we find "instinct becoming more general as we descend the scale, while intelligence emerges to view more and more as we ascend to the higher orders of animal life." But

Bergson's supposition of a difference in kind between these two divergent developments is a philosophical afterthought rather than a necessary biological conclusion from observation of the branching of the tree of life in these several directions; it will hardly win acceptance among biologists who would discard all philosophical postulates. It has value, however, in so far as it brings out and emphasizes the fact, the significance of which is too often obscured in purely biological writings, that the main direction of life has been away from the merely mechanical and toward the intelligent control of organized matter; that the issue of the evolutionary movement has not been the perfection of animal instinct, but along the main line of advance success has finally been attained in the liberation of free, intelligent action.

The general survey just given of the nature and functioning of instinct brings before us some characteristics of instinctive action which have suggestive meaning for the interpretation of life. One of these significant indications in the growth of instinct is that through it living matter is separated still further from inorganic stuff; it is carried a long distance on in the acquisition of power of co-ordinated action useful to the immediate needs of life. Instinctive life, as it is perfected in some insects, marks a new and marvellous advance of organic co-ordination over inorganic combination. What this gain in vital value may mean remains for us to inquire further on.

Another character of instinctive life is its regulative action. It evinces organic control of life *for further ends of life;* it is, in a word, a means of life, and as such must have some meaning in the evolution of life. This regulative control of organic reactions is discernible even in the unicellular *Protozoa.* As many biological observers have suggested, "there exist in every organism a power of adaptation and certain co-ordinating factors by which

the organism acts as an individual or a unit, notwithstanding the fact that its body is composed of a great number of chemically different substances. At the present time these co-ordinating factors and the power of adaptation transcend physical or chemical analysis, and raise the lowest protozoon immeasurably above inanimate objects, and perhaps justify in a modern sense the much abused term vitalism."[1] Of the behavior of these primitive organisms, Mr. Calkins, who has made a prolonged study of them, remarks further: "In some instances, notably in the more complicated forms, it appears that the organism as a whole is endowed with a set of motor responses which might be identified as instinctive. Stimulation at one point induces not a local response, as in *Rhizopoda*, but a reaction of the entire organism, which is poorly explained by the assumption of a machine-like organization of the cell, or by the statement that these responses are merely the expression of chemical and physical forces."[2]

Another significant character of instincts is that while primarily they may be purely reflex responses to a given stimulus, they lead to anticipative action; they are not only perceptive, but they are beginnings at least of some preperceptive awareness of some following consequent. They connect the present with some consequent. As such they become representative; they represent what has been experienced. Instincts thus have recognizable values or meanings for life and the end to be secured of its survival. Through animal instincts life enters the realm of values. They become means for vital uses under the control of intelligence, and they may be modified through conscious experience. The sight of food, or the mere touch of a solid object, for instance, may represent something having value for an organism. To an *amœba* a solid body represents a means of support as it moves

[1] Calkins, G. A., *The Protozoon*, p. 279. [2] *Ibid.*, p. 301.

into contact with it; the white *hydra* moves toward a source of light, around which its prey congregates. "Organisms," says Jennings, "react appropriately to representative stimuli." He adds: "In man we call this foresight, anticipation, prudence, etc."[1]

One other marked feature is of distinctive importance: viz., instinct is useful up to a certain limit. Up to that point it is a dominant factor; beyond it in the higher animals it becomes a recessive factor; in man it is subordinated to conscious control. Henceforth experience is no longer organized instinct, but is rationally organized as the basis of conduct; conscious choice and use of means has become the progressive method of life. We must follow, then, this method of advancing life in search for further signs of meaning in the whole process of life from its lowly origins. Before proceeding to do so, we would look back for a moment and recount the successive steps which we have thus far followed in the way of organic progress since life was once started on the earth.

Far back as life began, deeper down into the mystery of its origins than microscope may penetrate, an elementary capacity for nervous organization seems to have existed in living matter. A diffuse "circulation or distribution" throughout the whole organism, formative in growth, is assumed by some biologists.[2] Reflex movements are observed not only in simple animated organisms, but also in plants. In a species of grass, *Setaria*, for example, the seed as soon as it germinates does not produce a cylindrical stem, but one terminating in a wedge-shaped tip like a lance-head. When a group of *Setaria* is lighted from one side, it inclines strongly toward that side, and all the lance-tips point toward the light. But these tips are not curved at all; on the contrary, the whole bending is produced in the stem. The interesting fact is that the

[1] *Behavior of the Lower Organisms*, p. 333.

[2] So E. Rignano, *Inheritance of Acquired Characters*, pp. 29 *seq.*

tip is the point sensitive to the light, not the stem; yet the stem bends, not the tip. This is proved by covering the tops of some stems with an opaque cap; then, the grass stalks so protected remain vertical, while others, not so protected, incline their stems toward the light. Hence the little lance-head is the plant's sensitive organ, while the stem is the responsive motile region.[1] This elementary capacity for nerve structure becomes more and more distinctively developed, until through a series of changes, on an ascending scale of vital values, at length it is elaborately organized and firmly co-ordinated. Furthermore, we have observed that this development has been twofold, a parallel advance of structure and function. It is a continuous process; as we look back upon it, it appears to be an unbroken succession of steps or stages, not without divergences and retrogressions, but in the main advancing in the same direction. We have observed likewise that what is useful to life is retained so long as it is useful; otherwise it recedes and is superseded by some organic modification and more serviceable functioning in adaptive response to environment. The tendency has been to discard the form that has outlasted its usefulness, and to try some form that may prove more serviceable. We have seen that in the age-long course of this organic struggle and the victories of life on the earth, after sentience and a certain degree of animal awareness had been acquired, an "effective consciousness" at length was gained in man, who was distinguished from the animals when he first left records of himself in the cave-dwellings, by the fact that he not only could use what nature had furnished him in his own body, but he could make and use tools for his vital purposes. "Effective consciousness," as Morgan has happily characterized it, is something more than instinctive readiness of organic

[1] Francis Darwin, "Le mouvement chez les plantes," *Revue scientifique*, March 1, 1902, p. 265. Cited by Rignano, *ibid.*, p. 54.

responses; it is a selective, conative consciousness, determining from experience the one motor reaction among several which may be beneficial; and this effective consciousness (in whatever degree it may be presumed to exist in the higher animals), we may regard with Mr. Morgan as the foundation of intelligent experience, upon the basis of which may be raised the superior mental life of conception and judgment to which the human child falls heir.

In view, then, of the ascertained facts of the development of the nervous system, and its distinctive characters, which we have summarized above, what may philosophically be surmised as the interpretation of this portion of the history of mind in nature? We keep well within the limits of the known facts, and look in the direction toward which one after another they point, when we find at least the following signs of meaning in this part of the course of life—a vast distance and a gradual but great ascent as it has been from the primitive diffuse nervous potential of living matter to the marvellously organized brain and its perfected system of neural exchange ready for control and varied uses at the will of the human child.

1. In general the difficulties of reducing mind to matter are seen to increase the more we know of the evolution of both. By ingenious handling of some solutions experimenters have succeeded in producing something resembling the alveolar structure and some particular features of the living cell, although they are unable as yet by any impartation of energy from without to give to their semblance of a cell the potency of life. The imitation soon fails, and any synthetic attempt to combine chemical elements in organic forms capable of living soon becomes impossible when we follow the real cell of nature's fashioning through its actual functioning, when we behold it at length developing into two neurones, growing into a stem branching at both ends, constructing a com-

plicated network of reflexes, crowning at last its workmanship with a cerebral organ of control, and awaiting the final subjection of itself to the service of conscious mind. As the distance widens, the difficulty of a merely physical interpretation likewise increases. At the start scientific manipulation may create a verisimilitude of a cell; again it may take up an egg of a lowly organism and by chemical stimulation start up its inner power of germination; and, having so actuated it, succeed in carrying it a little ways on in its self-differentiation and growth; but at the farther end of the ascent of life scientific imagination fails to leap over the distance in kind between matter and mind, although creative evolution has compassed it. No biologist dreams of catching nature in the act of transforming an organic reaction into a thought of the heart.

2. The more knowledge increases of the physical basis of life, the less becomes the probability that some time more knowledge may discover the psychical to be nothing but a physical compound. The direction, that is to say, of increasing knowledge is to leave materialistic theories farther and farther behind in the search for the ultimate interpretation of nature.

When confronted with the difficulties in the way of accounting for psychological activities on a physical basis, the physiologist, who is inclined to that view, will reply, the difficulties lie only in the present limitations of our knowledge; if we knew a little more, the objections might begin to vanish. Meanwhile scientific biology has nothing to do with metaphysical hypotheses. But this answer involves the naïve assumption that what is beyond present physical knowledge must necessarily be physical; that what is superchemical or infrachemical must of necessity be identical with known chemistry. And this assumption is ventured as a generalization from what is known of physical continuity within a limited circle and

closed system of purely objective, experimental information. Now, there might be some show of probability for this assumption if the increase of this limited kind of knowledge should seem to lessen the difficulty, to bring out more and more close correspondence between laboratory products and mental creations; to equate the energies of the one in terms of the other; in short, to express the whole that is known of mind and its functions in the whole that is known of matter and its modes. But this is by no means the case. On the contrary, here again we notice that it has become harder and harder with the increase of scientific knowledge to apprehend the ultimate nature either of matter or mind, and still more to reduce all nature in the sum total of its manifestations of energy to a lifeless and mindless conglomerate of elemental stuff, or a fortuitous assembling of mechanical units. The microscope has brought us no nearer the secret of *form* in nature, though it discloses the fine lines of a diatom. Chemical analysis leaves vital synthesis a more subtle potentiality than Lucretius could have conceived. Physical science, passing beyond the atoms, which hitherto have been assumed to be the last limits of a material world, and opening a vast realm of radiant energies, has left behind as antiquated our clumsy conceptions of the materials of which the universe is built; it leaves imagination to look through the veil of the phenomenal for some further revelation of reality beyond the things that are seen. We must wait until we know, it is said. Yes, but as we wait, and knowledge grows, the natural expectation of life becomes less materialistic and more profoundly spiritual. What has just been said is not an assertion that the meanings thus far suggested of themselves prove a physico-chemical interpretation to be impossible; but it challenges the assumption that there is any reason to suppose that further enlightenment would enable us to perceive in nature and personal being only material ele-

ments; whereas, the more we know just what the physical is, the more we know that it is less than the psychical. We do not read into these opening pages of life any ultimate meanings; but we would estimate them at their true value as indications and anticipations of some meaning that may be made clearer as we shall follow farther the direction which nature has taken toward personal life and its ultimate significance. It is enough, therefore, at this point of our inquiry to say that the pursuit of the course of organic neural differentiation and animal psychology puts us upon the scent of some non-physical form of energy, which introspective psychology shall seek, if possible, to overtake. And there is nothing in the facts already clearly ascertained to forbid, but rather a great deal to encourage, further and profounder pursuit after the psychical factor within the domain of personal experience.

CHAPTER III

PERSONAL DYNAMICS

We come to ourselves as so much power to do things. Consciousness awakes with action; sleep is unconsciousness; we regain consciousness in some form of motion. A man is a dynamo in action conscious of its own working. The ultimate problem of personal life is not one of statics, but of the dynamics of conscious activity; what and whence is the movement, the energizing of such life, and whither does it go?

This first awareness of ourselves as acting is a starting-point for self-investigation. This sense of ourselves was already present in our earliest recollections of ourselves; and beyond it we cannot pass in reflective research into our personal origin out of the mystery of being from whence we came to ourselves. Like other first impressions, this may prove to be mistaken; yet often our first impressions are apt to prove true to our third thoughts, although many doubts and questionings may intervene before final judgment is reached. This first sense of ourselves as living beings having power to do things persists in our consciousness of personal identity to the end of life. Utter loss of conscious activity is the sleep of death. Illumining the whole field of consciousness, although not itself the object on which conscious attention is focussed, the inward sense of power to act is the light in which we walk through the outward world with which we have to do.

In this primal consciousness of self as active being there is immediately perceived no collection of several mental faculties nor dualism of our being in body and mind. We simply do things, and in the doing are aware of our-

selves as undivided beings. In our initial, unreflective feeling of existence the self is one, and what it does it does with all of itself. Indeed so subtly and closely are these factors of the physical and the psychical woven together in the structure of our being that it might even be asked whether man would have come to the knowledge of himself as a dual thing—a body of flesh warring with the spirit—if death had not entered to tear asunder what nature at his birth had so wondrously joined together. Without a first experience of another's death, the sudden vanishing of the spirit and the dissolution of all that was left, might not a childlike sense of life in body and mind as one joyous existence have remained as the first truth and reality of existence? The coming of death may have had more uses than we think for life, for full consciousness of its deepest meaning and highest power. For one to realize to its bitter end this mortal dualism of the spirit and the flesh, and then, if it be possible, to apprehend both in some perfect unity, is in thought at least to put on immortality.

Throwing out this passing thought to fall as it may, one thing is certain: in this world, where death is always with us, our early and living sense of personal unity remains always with us—unless indeed when we would become philosophers and analyze ourselves as objects of consciousness. We are aware of ourselves in acting as undivided selves, as personal wholes, just as nature put us together at birth and as our life carries us along through the years. It is true that, since man began reflectively to break up his self-consciousness into many pieces, it has been the puzzle of the philosophers to understand how to put them together again. But this primal fact is noteworthy: the interaction of mind and body in the unreflective awareness of the personal life, which it is difficult for our reflective thought to understand, is a simple personal dynamic that nature has set up and kept energizing in

our daily living. Something more than this may be said. In common experience the natural sense of personal unity appears in such expressions as "my body," or "we have bodies." We are embodied; the self has a body as part of itself. As the result of his investigations in physiology one may reason that the body has him and he is nothing else; but he does not live and act in that sense of himself. Or we may philosophically conceive that we exist in two parallel series as body and mind, bound together by some unknown tie, until both shall perish together—a theory, this, of mental and physical team-work without common signals or single direction, yet, notwithstanding, team-work usually of effective action. However we may philosophize concerning it, anteceding, underlying, pervading the common sense of men is the vital intuition, this first and last sense of personal unity.

Is this an impression of reality, or is it only an illusion? So critical thought compels us to ask our own sense of existence. We must follow, therefore, the physiologists and psychologists and diligently inquire of them what we may reasonably conceive ourselves to be.

1. We begin with the fact that we become aware of ourselves as existing in relation to other bodies in space, and in the succession of our activities as taking note also of time. But what space and time are has been the puzzle of metaphysics ever since man began to philosophize about himself. One simple affirmation with regard to space is true to our common sense of it; we are conscious that we are in space, but not of it. The actuality of something extended is experienced as we first come into touch with something not our perceiving self; the idea of space, unbounded and infinite, is borne in upon us as we look out and away. In this connection it is unnecessary for us to enter into detailed discussion of the manner in which physiologically the sense-perception of extension may have been acquired. In our thoughtful life space

may become a marginal consciousness, a receding horizon of our thought, no more in mind when we say, I am. The necessity of this spatial margin or setting of all our thinking is another matter; though with Kant we must regard space as a necessary form of thought, it is not an integral element of the content of the consciousness of self. Space is most out of mind when we ourselves are most in mind. The more intensive our thinking becomes, the more our bodily extension is forgotten. Of moments of highest mental action as well as of rapt spiritual vision, men may say with an apostle: "Whether in the body or out of the body, I cannot tell." Here, then, in this primal sense of mental existence, we observe a distinct difference between the energy of our inner activities and the movements which relate us to objects extended in space. Our thoughts, as thoughts in relation to each other, are not placed as things are with reference to two or more points in space. Whatever, then, the relation of a thinking being may be to external space, it must be *qualitatively* different from the quantitative relation, which is measurable, of several bodies to one another in space. Our thoughts are not extended quantities, but modes of conscious energizing.

A keen and insistent exposition of this non-spatial quality of the flow of personal life is a distinctive service which Bergson has rendered to modern philosophy. We need not deny Kant's determination of space as a necessary category, when we maintain with Bergson that thinking as an act and a succession of acts is not itself a process measurable in spatial relations; the thought as a static conception held objectively in relation to other formed ideas may fall under the category of space; but the act of thinking is not necessarily projected into space; nor is the order of logical sequence identical with spatial continuity. Hence, Bergson maintains, the distinction between body and mind is to be defined not in terms of space but of time. Deep-seated psychic states he regards as intensive, having no relation

to extensity. They "do not seem to have any close relation to their external cause or to involve the perception of muscular contraction. But such states are rare."—(*Time and Free Will*, p. 20.) "When we make ourselves self-conscious in the highest possible degree, and then let ourselves fall back little by little, we get the feeling of extension: we have an extension of the self into recollections that are fixed and external to one another, in place of the tension it possessed as an indivisible active will."—(*Creative Evolution*, p. 207.) He would lead philosophy to a new point of view when he says: "Physics understands its rôle when it pushes matter in the direction of spatiality; but has metaphysics understood its rôle when it has simply trodden in the steps of physics, in the chimerical hope of going farther in the same direction? Should not its own task be, on the contrary, to remount the incline that physics descends, to bring back matter to its origins, and to build up progressively a cosmology which would be, so to speak, a reversed psychology?"—(*Ibid.*, p. 208.)

We draw nearer the living reality of ourselves when we seek to apprehend what time is. The conception of time, cleared so far as possible of all confusion with the idea of space, is the most intimate and the least submissive to intellectual grasp of all the elemental aspects of personal experience.

2. Without entering into the endless discussions of time by the metaphysicians, we may put ourselves in the actual way in which we have come to our knowledge of it if we attempt to trace the natural history, so to speak, of our human consciousness of time. Comparative psychology has not much to teach us concerning the possible time-sense of the animal world. This is the more significant when we consider that much has been learned from the study of animal behavior concerning the space-sense of the animal mind; but conjectural statements merely may be ventured with regard to sub-human time, and these rest on inferences only from animal structure and habits. What, then, may be said of the phychological

basis of our sense of time? We have no direct sense-perception of the succession of mental states; nor can we distinguish or measure exactly on any fixed inward scale the succession of our thoughts and feelings, as we can the relative positions of points in space. What are the intervals between ideas? Nevertheless, in the rhythm of reflex movements, or in the deeper organic fluctuations, there may possibly be given some physiological occasion for the genesis of the time-sense. The throbbing of the heart, the beatings of the pulse, the rhythmic flow of nervous currents to and fro may furnish physiological conditions enough for the psychic sense of time to spring up and gradually to become a definite mode or habit of the child's maturing consciousness. However occasioned, when once acquired, the time-sense would appear as an innate idea or an *a priori* form of conscious intelligence. Now, if such be the origin of the human sense of time, some interesting consequences for the higher interpretation of our life seem to follow. For one thing, if such be its subjective origin, time cannot be regarded as having necessarily an absolute quantitative value. It is not a rate of motion measurable by an absolute standard. The time-rate for any species will depend upon the organic structure of the species; it is variant according to the physiological functioning of the individual. There is no standard biological clock. The time-sense of an *amœba* (if it may be supposed to have any) in its intermittent protoplasmic protrusions, or of the May-fly in its swift nuptial flight, or that of a dog, now leaping in joyous motion at its master's call, now waiting in exemplary patience on the door-mat, or that of the ruminant cow slowly chewing the cud under a tree—the time-rate throughout the animal world is indeterminate and not to be measured by the ticking of our clocks. Moreover, we are always changing our personal rate of living; the mind of man is not bound in its thinking by any fixed standard of

time. Some moments will seem long as hours; some hours pass all too quickly for us. Personal consciousness carries within it no standard time.[1]

Now, if we scrutinize closely this variability of the personal time-rate, we may gain some hint of what the meaning of duration may really be; for these ever-changing time-feelings of ours are not at all like the arrangements of points in space as we perceive them; nor are they a placing of our states of mind side by side together, as we might so many objects in a room. Rather we are aware of them as *changes in the states themselves*, one feeling blending with another, one thought interfusing and lending a different complexion to another. These inner changes in the successions of our mental life are marked and determined by differences of intensities in our feelings and transitions of characters in our ideas. Our mental states differ and our time-rates vary with them according to the interest they may excite, the attention which they stimulate, the absorption more or less of our thought in them. Often we forget time. We have been unconscious of its flight; we have not heard the striking of the clock; we have been living within ourselves the timeless life. Thus a public speaker will become oblivious of the length of time he has been speaking, while his audience may have become increasingly conscious of the length of it. We may, indeed, retain a certain subconscious sense of the lapse of time in hours of intense mental abstraction; in many instances it seems as though the physical mechanism were keeping a record of the passing moments while the mind in the intensity of its thinking ignores them. Habit may give to the trained speaker the faculty of setting for himself, as it were, an internal alarm-clock, so that he may leave out of mind all thought of the length

[1] So Mr. Bradley holds that there may be any number of time-series. It is not necessarily any one succession. There may be also different directions of time-series.—(*Appearance and Reality*, pp. 210 *seq.*)

of his discourse, confident that his physiological alarm-clock will strike and awaken him to the situation when he ought to stop. This, however, would seem to be a too exceptional oratorical gift. In our dreams we are usually aware of rapidly changing mental scenes, and of events and situations often abruptly passing into one another, which actually could occur only at separate intervals or after prolonged periods; yet they all come and go in a momentary transition between sleeping and waking. In such dreaming a sense of duration may be felt, but no time-measures are taken. Now, such seeming independences of clock time—this conscious flowing of our life in a timeless sense of it—is enough to raise again the same question, which we find meeting us at every turn in the way in which we have come to be what we are; what is this inner relation of our mental states?

How is it that we know ourselves by these differences from measurable things? Is there an intelligible distinction between an inner sense of duration and a perception of measured intervals of time? If we stand by the sea it is a simple thing to measure by the marks on the shore the rising and ebbing of the tide; as we sail over the wind-swept surface we may count the succession of the breaking waves; but suppose an organism possessed of intelligence submerged far from the shore beneath the surface, swinging to the turn of the ocean tide, and moving with its rhythmic motion, yet having no means, like the marks on the shore, to determine the tidal periods or any perception of the passing waves; such an intelligence might acquire some sense of duration, but without distinction of time intervals. It might have a rhythmic feeling, perhaps, of motion, a certain vague consciousness of successive states, but without a sense of clock time. That requires relations to outward objects by which it can be determined; for its acquisition vibrations only, mere strains and stresses in a perfect fluid would not be enough.

Thus, it may be said, a sense of the duration of mental states may be mentally possessed, although such experiences be with difficulty abstracted from that measured knowledge of time which has been gained by the combination of the sense of duration and extension in our actual experience. So the time-sense and the space-sense, though the former, as Bergson contests, is not to be confused with the latter, may be conditions each for the other. It is idle, however, to attempt to catch in any definition the elusive sense of time. No one metaphysician has ever succeeded in telling another what time is. The schoolmen attempted to envisage eternity by imagining it as an immovable rock in the midst of a flowing stream —the future ever flowing toward it, the present breaking at its foot, the past receding always—itself the same in the midst of the years. The mystics, casting all visible imagery aside in their moments of transcendent vision, could speak of themselves, as did Thomas Erskine of Linlathen, as having been in eternity and out of it in ten minutes. In eternity, out of it; independent of the passing moments, yet dependent upon the passing day; seeing the things that are temporal, yet looking at the things that are eternal—such is the paradox of our experience. Who shall tell us what other intelligences, living in star-systems the motions of which are not set to our sundials, might declare concerning their seasons, what time is to them, what to them eternity may mean? What for *all* intelligences is eternity? This paradox of time and eternity in our human experience has in it hidden truth. These "flashings of everlastingness" are momentary revealings of something of abiding worth—a reality that cannot be assayed in the balances of our temporal successions. As we make our sense of time more or less—making and changing our own rate of living—we seem, indeed, to be in this world of things temporal, but not of it.

In St. Augustine's works the sense of space and time

as possessed by us, while we ourselves belong to the non-spatial and the eternal, found frequent and unequalled expression. More than any of the Alexandrian Platonists or the Christian mystics, his words reach the utmost limits of intelligible expression of the inner life as existing in an eternal order of being—the immediate feeling of being ourselves something other than the temporal in the midst of the things that are seen and temporal. Of our personal relation to space he says: "What place is there within me, whither my God can come? . . . I would not exist at all, unless Thou wert already within me. Thou wast never a place, and yet we have receded from Thee; we have drawn near to Thee, and yet Thou wast never a place. . . . The bodily creature can be changed by times and places, say from east to west. That thing is not moved through space which is not extended through space. . . . The soul is not considered to move in space, except it be held to be a body."—(*De Genesi ad litteram*, viii, 39 : 43.) His insight into our consciousness of time finds expression in such words as these: "Thou, O God, precedest all past times by the height of Thine ever-present Eternity; and Thou exceedest all future times, since these are future and, once they have come, will be past times. . . . Thy years neither come nor go; but these our years both come and go, that so they may all come. All Thy years abide together, because they abide . . . but these our years will all be only when they have ceased to be. Thy years are but one day, and this Thy day is not every day but *to-day*. This Thy to-day is Eternity. Who shall hold man's vain heart and fix it, so that it may for a little abide, and may for a little grasp the splendor of ever-abiding Eternity, and may compare it with the never-abiding times, and may thus see how Eternity is not comparable with them?"—(*Conf.*, xi, 13 : 2.) "True Eternity is present where there is nothing of time."—(*Tract. in Joann. Evang.*, xxxiii, 9.) He can speak of mo-

ments in which we "touch slightly, by an impulse of all our heart" that which is Eternal, and he can say: "If that our touch by our rapidly passing thought of the Eternal Wisdom which abideth above all things . . . were to be continued . . . so that Eternal Life would be like that moment of intelligence—would not that be the meaning of the words 'enter thou into the joy of thy Lord'?" [1]

Augustine's sense of duration, which was derived from his religious experience, his mystical feeling of eternity, may be compared with Bergson's idea of duration, which is the result of his keen analysis of the sense of space and time. To him, as to Augustine, there is a constant difference between duration and clock time. Bergson distinguishes between "the possible conceptions of time, the one free from all alloy, the other surreptitiously bringing in the idea of space." The consciousness of pure duration he compares to our state when "we recall the notes of a tune, melting, so to speak, in one another." "Pure duration is the form which the succession of our conscious states assumes when our ego lets itself *live*, when it refrains from separating the present state from its former states. . . . Thus, within our ego, there is succession without mutual externality; outside the ego, in pure space, mutual externality without succession. . . ." "There is a real space, without duration, in which objects appear and disappear simultaneously with our states of consciousness. There is a real duration, the heterogeneous moments of which permeate one another." [2]

One may accept Bergson's view of duration, and his clarifying the immediate experience of living in time from confusion

[1] *Conf.*, ix, 19 : 2, 3. See Baron von Hügel, *Eternal Life*, pp. 87–90.

[2] *Time and Free Will*, p. 108 *f.* Aquinas conceived of an intermediate mode of existence between the temporal and the eternal, which he called *Ævum*, and which participates in each. Baron F. von Hügel regards this *Ævum* as an interesting groping after Bergson's idea of duration, "the succession of which is never all change, since its constituents, in varying degrees, overlap and interpret each other."—(*Ibid.*, p. 106.)

with the idea of space, as a positive contribution to philosophic thought; but we hesitate to accept his estimate of the function of intellect in his theory of knowledge. The acuteness of his intellectual analysis of consciousness itself witnesses to a higher efficiency of the intellect in the process of knowing ourselves than he accords to it. While it is true, as he affirms, that all the purely biological or physical moulds crack when we seek to fit into them the entire contents of consciousness; it is also the fact that the stream of personal life, even at its fullest, does have banks, and though at times it seems to overflow all limitations, it is nevertheless held within bounds to its natural course. The forms of thought, within which we must think, if we think at all, the categories of the understanding, remain; push them back as far as we may, our conceptions can never overleap their limitations. The banks are not the stream, nor the fountains from which it springs; the forms within which the conscious thought is held are not the personal life, nor its upland sources and perpetual springs; logic is the determination and law of its flowing. We have to find its direction, and to measure its course as an observer from the banks.

3. We have further to avail ourselves of all possible psychological means to determine what is involved in the experience of ourselves as personal units. We are integers, whole numbers to ourselves. Living is a process of integration. The more intensive the living the stronger is the sense of the wholeness of life. This fundamental experience of unity is to be held fast in the interpretation of personality. No theory of personality can be true which departs from this fact given primarily in experience of the basic unity of being. The personal, I, is the constant of which the verbs are predicates—I think, I feel, I act. The person may be described as that to which all the contents of consciousness are referred. This vital unity is not to be compared with a mechanical fusion or a chemical compounding of separate elements. In self-conscious action the impulses transmitted from nerve conductors, the experiences of the past which are latent in memory, the

cerebral centres that are stimulated, and the mental processes that are started, all are grasped in a single determination, concentrated in a dominant thought, and directed as one personal act toward a definite end. Of this personal unity it may be said that it grew rather than that it was made. It did not spring up all at once out of nothing on the earth. We have already observed that a principle of organic control appeared in the earliest beginnings of life; it may be discerned even in the behavior of unicellular organisms in a microscopic field. Doubtless we shall learn more in time of the chemical and mechanical stresses and tropisms of protoplasmic matter, but, as our knowledge of vital reactions grows, the primary fact does not diminish in meaning that the least protozoa act as whole organisms in response to vital stimuli, and not as a mere conglomerate mass of particles without organic co-ordination, although that at first may exist in but slight degree. This principle of unified action for an organic end and welfare, once fairly gained in nature, shall never be lost. The vital law of the control of the whole throughout the parts is henceforth never to be given up, however specialized the parts shall become and intricate their connections may be. This fundamental principle of organic behavior is as primal and as universal in the realm of life as the law of gravitation throughout the realm of matter. The natural tendency to bring the parts into subjection to the ends of the whole organism manifests itself in three main directions—progressive specialization of organs for the maintenance of life; more responsive correlations between developed organs; and, upon this basis, more diversified and useful functions of body for the welfare of the organism as a whole.

The highest power of organic control is realized in man's ability to live and to act with all his mind, and all his heart, and all his strength. This is our apprehension of personal unity as manifested in action. In the per-

sonal use of this power of organic control we see fulfilled at length the part which animal acquisitions and instincts have played for the ends of life; but more than these, superseding the animal instinctive means of preparation for future needs and the survival of the species, the personal power of living for organic ends has become a facility of conscious adaptations to individual needs and of purposeful action, not merely responsive in an automatic way to immediate situations, but also directed to ideal ends to be followed into the far-off years.

Certain aims and issues of organic control the human shares with the animal life before it. It aims to keep its own wholeness, to maintain its specific form of being. It shares also to some extent that virtue of self-healing and repair which characterizes life in general. But there is one conspicuous aspect in which man's power of self-control is unique and transcendent: a man can consciously and with forethought lay down his life. This is more than an instinctive act, as of a bird fluttering around its nest to protect its young; nor is it merely that higher animal fidelity which sometimes seems so human, as when a dog leaps into peril following its master perhaps to death. When the Son of man said: "I have right to lay down my life" (John 10 : 18, margin), he uttered a word transcending any natural impulse merely of sacrifice. By that human declaration of right, a diviner mastery over life and death is affirmed—the moral power of self-devotion to an end beyond self, and the supreme personal right of sacrifice.

Nor is this new commandment of love rendered any the less humanly transcendent by the fact that, when it is announced by the Son of man, it is seen to fulfil all the law and prophets of life before it. It comes not to destroy but to fulfil the earliest adumbrations of it in the co-operation of the primitive colonies of separate cells, in the social instincts of the more advanced species, and

in the anticipation of it in the mother instinct of self-forgetfulness, which is the most human thing in the animal world. These were not yet made perfect; these all led on to "a more excellent way"; the end of God's ways is not reached until the greater love is come, in which a man lays down his life for his friend. On the cross the divine right of the Son of man to lay down his life for the world is witnessed in his finished work of obedience unto death.

The full import of this reflection is not grasped unless we observe that the new way of sacrificial life does not enter as a cross-road the path of natural life which we are following; it is a continuation of it up to another level. It carries the previous way of life beyond and above what seemed to be its natural termination. Just where nature's ways seemed to meet and end, this new divinely human way of life begins; and in a direction which knows no bounds. As the last meaning of the inorganic is that it leads into the vital, the final significance of the animal is its fulfilment in the human.

We are now prepared to proceed to a closer introspection of the contents and meaning of personal consciousness. Along this further inquiry we must still carry our physiology with us, eager to trace to the finest ends the connections between the physical and psychical, and ready to avail ourselves of any cross-lights that experimental psychology may throw upon introspective search for the meaning of our personal being and destiny.

I

Sense-Perception

We enter this section of our subject at the point where we meet the question concerning the nature of sense-perception.

1. It is a crude way of representing the perception of

an object to regard it as an image impressed on some cerebral cell, like a photograph left on a sensitive plate. It is a visual image, but it is more than the form of an outward object mirrored in the retina of the eye; for a perception is also our act; we are both instrument and operator. What we see not only represents the object in space, but also it is an experience in time of our perceptive being. It is something in nature acting on us, and also something of us manifesting its energy. Moreover, this sense-perception, seemingly so passive, is a form of energy, becoming kinetic, if transmitted into muscular motion, or being potential when stored up as memory. The initial of a sense-perception is some impact from without; a wave of air or vibration of the ether of space breaks upon the ear or eye, and instantly—we know not how—its energy is transformed into other modes of motion from cell to cell of nerve conductors; it impinges upon some central area, from whence it may be carried outward and further transformed into some bodily motion, setting still other forces of nature into action; while also in some manner, which none can discern, it occasions or is accompanied by our consciousness of something seen, or heard, and done. All this is action; there is no dead wire here. A still landscape, so far from being a mere picture in an observer's eye, or remaining a quiet contemplation in his afterthought, is actually in his perception of it a perfection of harmonized motions of radiant energies touching the retina, of marvellously intricate adjustments of protoplasmic molecules, of swift impulsions running to and fro, and of we know not what selective associations and mental transformers. As Mozely finely has said: "Nature, in the very act of laboring as a machine, sleeps as a picture." The picture of a quiet landscape in the evening light is the harmony and peace of innumerable activities of nature without us and within us. Nor is this all; for the observer's attention may hold a land-

scape clear and still in the mind's eye, or as quickly let it vanish and another motion-picture take its place. And this attention, focussing and framing every object of conscious perception, is itself so much energy; intense attention is itself intense action. Things are in relation to us only as we relate them to one another. The relating them is our act. Sense-perception, as the physiologists rightly tell us, furnishes the raw material for subsequent mental construction; but is it to be accounted for merely as a complex series of nervous contacts and currents? Moreover, while the act of perceiving brings us into immediate contact with nature, does it leave us bound to the material world? In the act of perceiving is nerve contact with nature merely the completion of a circle, or is it the beginning, also, of something further in us? Here likewise the old question of the philosopher rises before the facts of the physiologist, and we must look to the end.

The physiological fact, so far as it has yet been scientifically determined, neither excludes the question of interpretation nor renders the answer. A sense-perception is not a full period, it is an interrogation-point for psychology. Nothing can be more short-sighted or presumptuous than for experimental psychologists to take it for granted that they have reached the end of self-knowledge when they have only reached the end of their laboratory tether. There are outlying aspects of sense-perception which open the whole field of psychic inquiry. Other factors which lie beyond physiological determination, have to be admitted to fill up the gaps between the incidence of the rays that fall on the retina and the mental image perceived. The continuity of the process from the peripheral sensation along the optic nerve to the optic cerebral area and into the consciousness of the outward world as perceived must be admitted; but the molecular motions of the cerebral cells are not the perceptive con-

tents of consciousness, nor can the functioning of the brain be identified offhand with the appearance of the perceived object in the mind. A measurable quantity of energy goes into the eye as light, and it comes out as an immeasurable perception of an object; what and how is the transformation in consciousness made? [1]

2. A further interesting inquiry is presented by the interval of time that is found to occur during the conversion of an afferent current through the cerebral centres into an efferent current terminating in a muscular response. Some portion of this interval is required for the transforming action of the cerebral portion of the sensori-motor mechanism. What control is exercised at the central station? How does it happen that several afferent currents are inhibited, and one selected in responsive motion? What directs the central switchboard? Among the many clamorous, conflicting, persistent calls which come up from all over the bodily organism to the central station, what selective power lets one have the right of way, and holds up or sidetracks the others? Here, it is true, many are called and few are chosen; among all these upcoming sensations what indwelling power does the choosing? Science does not know a divinity outside the system to direct the operation of it. What factor, then, is it inside the whole physiological

[1] "The relating process as itself content of the perceptive process (*a* and *b*) must be included in the physical process; but how?"—(Büsse, L., *Geist und Körper*, pp. 209 *seq.*) So also R. S. Woodruff: "The attempt to describe percept-qualities as syntheses of sensory qualities is hypothetical in the second degree. The presence of the required images is hypothetical, and no less hypothetical is the power of the images, if present, by combining with the sensations to produce a percept. They might fuse, no doubt. But is the feeling together of clanging noise and visual picture fully equivalent to the perception of a ringing car bell?" . . . "A percept is not a synthesis of sensation and image; it is a reaction to the sensation. It is not a motor-reaction, but a mental reaction."—(*Journal of Philosophical Psychology*, IV, 1909, p. 173.) Similarly Wundt: "Every perception brings in a new property not as yet contained in its elements, the *form* of the ordering of the elements."—(*System der Phil.*, I, p. 333.)

system that secures this "effective consciousness," which maintains its control in the swift yet orderly procession moment after moment of our mental perceptions?

This seeming dualism of the action of body and mind in the unified process of sense-perception compels us to look further, if we would gain the slightest intelligible apprehension of its occurrence. There must be some reason in it and for it; apparent dualism cannot be a final contradiction of experience; for unity, as we have observed, is a primal reality of personal being in our conscious sense of it, and we must therefore reasonably hold fast the postulate that all facts of experience in some way shall prove consistent with the integrity of personal being.

We may take the next step in our inquiry concerning the growth of mind, as we consider the identification of percepts and the beginning of memory.

II

Beginnings of Memory

An exercise of mind distinct from, yet closely related to sense-perception appears in the act of identifying two or more perceptions. This involves some degree of comparison and discrimination.

If we suppose an organism so limited in its movement that it could perceive but a single fixed object; or if we imagine an eye so placed at a point of space that its field of vision would always be filled with one star, which in turn should always shine with the same intensity; then an absolute arrest of intelligence might ensue; constant uniformity of response to one unvarying stimulation would inhibit the growth of intelligent perception. The fatigue of the same perpetual stimulus might cause degeneration and eventually the utter loss of reason. We know how a mind possessed with one idea may become a lost mind.

Rational life requires for its exercise and increase a suc-

cession of perceptions. Our physiological structure, as we have seen, has been built up on the ground-plan of two neurones, and the human child arrives at birth fitted out with sense-receptors, responsive to an endless variety of calls from the world into which it comes. Something more also is given it in preparation for its individual experience. It has power not only to receive successive stimulations, but the further distinctive ability to learn to discriminate among these impressions, to compare them with one another, and in so doing to hold several of them together in one conscious grasp of a manifold of sense-perception. This is something quite different from a perception of a succession of objects flying across the field of vision, as one may look from a window of a fast express and see, without distinguishing, passing trees. Successive perceptions in this mental act are held long enough in mind to identify lines and to notice differences; hence the child learns in time to give names to things, as Adam was distinguished from all the animals in the garden by giving names to them all. This identification of percepts involves likewise power to apprehend a series of objects as a connected whole. This is obviously an identifying act that goes beyond the simpler processes of nerve-reflexes; some other factor at this point is the determining influence in the development of mind. Some capacity of analysis and synthesis has begun to work in connection with the growing brain; henceforth a power of selective intelligence shall be dominant in life. Biology must make room for its value and power; having once entered into life, nothing can put it out again. This brings us directly to the consideration of memory. We will enter this field, as we have the preceding inquiries, from the biological side.

III

The Physiological Elements of Memory-Images

Physiological psychology has made of late years several contributions of value to the natural history of memory. One is the supposition of a possible modification of the cerebral areas through a delay in motor-responses to some stimuli. It is said that from a past experience an attitude of expectation may have been acquired. From something that has affected us we are thrown into a certain state of expectation of something that may affect us. Thus a stimulus is carried over from something done to something that may occur; and this is useful for the preservation or betterment of life. The utility increases as exposures of an animal to hostile movements are multiplied; consequently there results a storing up of repeated stimuli, or danger-signals, in a habit of motor-responses, which put the animal quickly on its defense. This sensori-motor habit becomes an important factor in the selective survival of the species. There is gained also an inherited determinant and function of memory. The primary use of something like that which we recognize in ourselves as a memory-image, we surmise, was to carry the organism beyond the limits of the immediate environment, and to assist it in foreseeing and providing for the future. It was a means of remote adaptation.[1] Some idea of its possible origin may be conceived in this way: if the stimuli and responsive motions of an animal should follow each other rapidly, when immediate action is necessary for its preservation, the result would be the setting up of a series of automatic repetitions of movements without any conscious aid or intervention. Automatism might then be regarded as a sufficient scientific account of the resultant animal behavior. But suppose the re-

[1] Washburn, M. F., *Mind in Animals*, p. 273.

action to the stimulus to be delayed, as when a single stimulus only slightly innervates the motor apparatus; and suppose also that no urgency of life requires immediate response, as when an animal sees an object approaching from a distance without sense of immediate peril, or after perceiving its prey must wait in suspended animation before leaping to seize it. During this interval the restrained nerve-energy prepared for the next action may to some degree innervate the mechanism for the motion to be let loose, while some of the energy may overflow into the sensory centres, which the anticipated stimulus will stir to full activity. The result of this waiting period of restrained innervation, it is said, may be an "idea, or image, rather vague, of the stimulus waited for." [1]

Another suggestion that may help out the attempt to conceive of the origin of the memory-image from the physiological side is the so-called "movement idea." A perception is gained by a movement of a sense-organ, as the hand over an object; and the more varied the power of an animal to receive sensations through movements, the wider will be the range of its sensory discriminations, and the larger the number of its definite perceptions of objects. A movement idea is supposed to be "the revival through central excitation of the sensations, visual, tactile, kinæsthetic, originally produced by the performance of the movement itself."

Before proceeding, however, to determine the processes involved in memory, we should return and examine more closely the nature of sense-perception in its relation to the memory-image. Our memories are images of images; they reproduce our perceptions; and our perceptions also are not pure perceptions, but memory-images also enter into them, giving to them form and color. The picture which at any moment you may have in your eye is not merely the effect of the rays of light at that moment

[1] *Ibid.*, p. 274.

touching the retina of your eye; it is also interfused with past impressions quickly gathering from within to meet and blend themselves with the scene opening on your vision. At any moment of perception the mental imagery is a composite pattern, woven of many threads and colors, never the same in its swift succession and evanescent hues. Lost far beyond recall are the first pure perceptions of childhood, unformed by experience, uncolored by reflection. We see things in the present through our past, far more than we may think. A photograph, for example, is one thing to the eye of a stranger; it is a different thing to one who has seen and loved the face. In present vision there lingers something of the light of other days. An artist perceives more in a landscape or in a human form and face than others see, not merely because his eye may be keener than theirs, but because behind the retina of his eye an artistic power and habit of perception have been acquired; memories of years of training and of studious hours before nature's revelation and in art's interpretation are present and blend with his perception; in this inner light he sees. Hence it is that often in the effort to see things as they are we look again and again, making the effort to rid ourselves of past impressions that we may make no error in our observation. Experimenters have to discount the personal error of the observer. Now these overlappings and shadowings of perceptions and memories, which complicate the analysis of the psychologists, are not to be put aside in any adequate theory of human knowledge. To account for them physiologically would require an additional refinement of the supposed automatic adjustments of movements, a far more intricate complication of the already overtaxed mechanism of nervous reflexes in the mechanistic explanation of personal life.[1]

[1] Bergson's keen analysis of perception and memory is a notable contribution to the issue between materialism and spiritual vitalism, which is of value irrespective of his general philosophy.

Looked at from a purely physiological point of view sense-perception itself presents inexplicable problems in the present state of our knowledge. A critical inspection of the phenomena of binocular vision, for example, discloses some phenomena which imply something beyond any known forms of mechanical adjustment and action. Several observers, notably Mr. Sherrington, have called attention to the following inquiries.

It is a question how and where the images in two optical instruments, such as the eyes, are fused in one mental perception—how two neural systems of reception and communication of these two optical images are unified in our consciousness of one image. This is not the general difficulty of imagining how a mental representation of an outward object may be occasioned; it is the more specific difficulty of conceiving how a machine constructed as an optical instrument can of its own motion produce a result entirely different from that of any optical instrument. Moreover, besides this metaphysical puzzle, a strictly mechanical objection to the mechanical theory is brought out by Mr. Sherrington's experiments on binocular vision. In order to determine the mechanism of vision he devised several ingenious experiments with flickering lights, and lights of varying degrees of intensity. Each eye receives upon its separate retina the rays of light, and has its separate path of nervous conduction to the optical area of the cerebrum. So far the mechanism seems quite like that of an ordinary field-glass. But the field-glass only serves to concentrate and carry a few more stimulations of light-rays to our optic nerves; how is this process continued and the separate optical images fused in our perceptions? This again might seem a simple matter mechanically if the two images were thrown together upon a common field, point corresponding to point, line coinciding with line in one optical image; but our internal field-glass is not so constructed. Vision with us has

other ends to fulfil than simply to produce a sharply outlined mental photograph. The human optical apparatus is itself but part of a larger system of vital activities and organic preservation. It belongs to and serves a whole defensive and offensive organization in the struggle of animal existence. It has been fashioned and adapted to organic demands in the midst of contending forces. Life is intensely on its guard in vision. Not only through the eye is intelligence to be signalled to the brain of whatever may appear within the range of sight, but also the forces of the entire body are to be summoned for whatever action, immediate or expectant, may be required; and then these forces are to be directed to definite ends through the activity of the organs of vision. In the animal economy vision is thus not only the searching sight of the watchman aloft; it becomes also the call to the officer on the bridge to press the button, or to issue the word of command that shall swing the helm, or cause the engineer to alter the motor-power according to the moment's demand. This double function of vision in serving organic needs—its receptive capacity and its relation to motor-responses—differentiates it at once from an optical instrument, and renders the study of its mechanism and uses far more intricate and obscure than a determination merely of its optical construction. Mr. Sherrington's observations relating to this subject are too technical to be rendered easily intelligible in a descriptive summary of them, but some results which he reached may be given as follows:

1. His experiments indicate that the single visual image which we perceive is not unified physiologically prior to the mental act of perception, but is the product of a further psychical proceeding. The nervous reactions that are initiated at twin points on the retina of each eye are not fused early in the retino-cerebral nerve-chain to enter mechanisms common to both. On the contrary,

"only after the sensations initiated from right and left 'corresponding points' have been elaborated, and have reached a dignity and definiteness well amenable to introspection, does interference between the reactions of two (left and right) eye-systems occur. The binocular sensation attained seems combined from right and left uniocular sensations elaborated independently" (pp. 357–381).

2. There does not appear to be, according to these experiments, any discernible traces of interference or fusion of the nerve functioning of the sub-perceptual events previous to the point or moment of the consciously unified sense-perception; on the contrary, two distinct sensations are conjoined and elaborated in the final perceptual image. The images of a flickering light in the left eye and the right eye, when viewed singly, do not appear to differ in our sense of them. "It is much as though, of the left and right lantern images, each were seen by one of two observers, with similar vision, and as though the minds of the two observers were combined to a single mind" (p. 380). How, then, are these two minds connected and their observations combined? The ultimate problem of perception is not optical but mental—not fusion of sensation, but mental integration. Moreover, binocular vision is not the result of an addition of two similar degrees of brightness, or the increase of two nerve-currents flowing together in a common path. It is not, then, mathematically to be explained. "The binocular result most often does not perceptually differ from either of its two coequal components" (p. 380). Mr. Sherrington sums up the results of his experimentation in this sentence: "Our experiments show, therefore, that during binocular regard of an objective image each uniocular mechanism develops independently a sensual image of considerable completeness. The singleness of the binocular perception results from union of these elaborated uniocular sensations. The

singleness is, therefore, the product of a synthesis that works with already elaborated sensations contemporaneously proceeding" (p. 382). The elaboration of each of these sensations, as we have already noticed, is the initial problem; another outlying problem is reached at the end of this physiological chapter. How is the synthesis of these sensations in the one resulting perception to be apprehended?

3. Mr. Sherrington finds a further difficulty in the way of a purely physiological explanation: the co-ordinating mechanism of a binocular vision does not lead directly to "some supposed nodal cortical" point with a hypothetical "sensual *Deus ex machina*." On the contrary, "the confluence of conductors from the two retinæ to the same cortical field, though not uniting their retinal impressions, gives them access to a common efferent path which both must use" (p. 385). There is thus a "convergence of afferent paths leading to a motor-synthesis, but not, or only remotely, to sensual. Seen in this light, the gulf between sensation and movement looms up even wider than was allowed for," when Mr. Sherrington began his experiments on flickering lights (p. 386). Similarly, Meyer says: "Certainly the simple diagrams of the retinal relation which have hitherto contented us are quite inadequate. They may account for all motor-reflexes, but they cannot account for all binocular conscious processes." These observations invalidate again the answer that more knowledge might enable us to reduce the psychic appearances to a physical basis, for they point the other way. We cite Mr. Sherrington's own conclusion from his experiments: "The cerebral seats of right-eye and left-eye visual images are thus shown to be separate. Conductive paths no doubt interconnect them, but are shown to be unnecessary for visual unification of two images. Here we seem to have, therefore, contemporaneity of itself sufficing for sensual synthesis, without necessarily any spatial

fusion of the neural processes or mechanism involved, *i. e.*, without spatial confluence to a unit apparatus." This is a very suggestive fact that the unifying of two retinal impressions is thus taken out of measurable space and shown to be an act requiring time; the synthesis is not dependent upon space contacts or confluence. Sherrington adds the important reflection: "Pure conjunction in time without necessarily cerebral conjunction in space lies at the root of the problem of the unity of the mind" (p. 384). A fusion of sensations purely in time seems conceivable only as a psychic operation; so the increase of physiological knowledge of binocular vision leads away from the hypothesis of a fusion of chemical elements within a brain-area. The following warning of Sherrington is needed when one reads much recent psychological literature: "Hasty conclusions identifying things that closer introspection finds to differ, are the easy solutions into which a too eager physiological psychology may fall unawares." [1]

It appears, then, that perceptions are not to be weighed as physical quantities, or measured as a series of states juxtaposed in space; they are moments of a process of living. The personal problem is not even stated when perceptions and memories are treated as so many fixed images and not apprehended as successive forms of intelligent action.

While our perceptions and memories are interfused in consciousness, and neither of these mental activities occurs without bringing with it something of the other, they have their distinctive marks and values.

We are prepared now to consider further the nature of memory. We have already found a possible source of

[1] It is to be noted that this experimental differentiation between spatial and temporal fusion of sensations in perception falls in very well with Bergson's analysis of perception and memory. See *Matter and Memory*, pp. 26 *seq.*

memory as we have searched for the beginnings of the perceptive power of animal life. Both run back to a common vital origin. The foundations of memory are without doubt laid in some elementary properties of living matter. The congenital determination of instincts, the formation of habits, and the increasing articulation of the nervous system, with consequent gain of capacity for purposive use of all the members of the body, extend the range and effective exercise of memory. To what extent, if any, in the higher animals memory has been carried beyond that of immediate association and identification of objects which have been more than once perceived, together with some preperceptive sense of their possible sequences—this is a matter of conjectural interest for the student of comparative psychology.[1] In man this power of recalling and using the past for present ends and prospective values of life has reached its climax; and with it there has been acquired a seeming reversion of it, the power, also, of forgetting. We can lose our memories, but not so easily our instincts. We do not know whether animals have power to forget; but we can forget, and this ability to let things go from us, as well as to learn, is a part of our higher capacity for education and a means of ever-progressive intelligence. Ability to forget the things which are behind, is an element of great value in the mental and moral endowment of man. Progress would be well-nigh impossible without it. This is to a considerable extent a power subject to choice, a voluntary control over our memories. But just this acquisition of the ability *not* to remember has been altogether too much overlooked in current physiological theories of memory; and this signal mark of personal control over past experience must be recognized in any adequate interpretation of human life. Physiological researches undoubtedly carry

[1] The physiological process of itself would not necessarily imply conscious memory. See Loeb, *The Dynamics of Living Matter*, p. 6.

us a considerable and very interesting way in the study of memory, but just when these investigations are pushed to the extreme of possible knowledge we need the caution against jumping to hasty conclusions as though we had reached the end of the whole matter. In the investigation of memory a bridge of unsupported assumptions should not be trusted as a real connection between the two sides of our consciousness. Physiological psychology has need to be most humble just where it is most successful.

Distinctive characteristics, such as the following, are to be recognized in the memory processes, and they should not be overlooked in their possible significance.

The physiological conditions have become further differentiated from those involved in immediate perception.

1. A memory may be stimulated by a perception of some outward object; another factor, however, comes into play to constitute a memory—the coincidence with it in consciousness of another percept which has already been received. A memory is a meeting of two images and their correlation—an immediate perception or image and some other percept or image.

2. Moreover, memory is not an action wholly dependent upon stimulus from without through some sense-perception. Even if the train be started from without, it runs on under its own power; we shut our eyes and let memories pass before us one after another. The memory movement is a movement within consciousness, during which the outward world of the senses may fade and be lost to consciousness.

3. Besides this, the direct action of a perception and memory upon the physiological mechanism is characteristically divergent. In and through perception a stimulus is first felt at a peripheral point (or at some bodily point) of sensation. There is a transmission of the induced nervous current to the central system, and its conversion

into an outgoing stimulus (if not otherwise inhibited), and its direction along an efferent nerve-tract ending in a motor-reaction. In memorizing, the sensori-motor mechanism may be set vibrating, as in the slight action of the lips when one is recalling a line, or in other suppressed muscular motions; but the muscular mechanisms, so far as they are affected, are touched from within, by the stimulus of a memory-image, not directly from without by an immediate sense-perception. There is thus a mental intervention—the projection of an idea—a representation of a presentation—into the course of the sensori-motor sequences. A memory, however stimulated, takes its start from an already accomplished mental act, and is itself a synthesis of at least two percepts: one that has been and one that is. This synthesizing action is a factor to be accounted for as distinctive of every true memory.

4. Furthermore, it may be that in perception the direct or main current of stimulated nerve-energy is from one end to the other of the sensori-motor mechanism through some central combining centre; and consciousness of it is occasioned, if at all, by its indirect conduction—its overflow, as it were, into consciousness. But there is a reversal of this in memory. Its first appearance is in consciousness; as a content or a succession of moments of consciousness its energy becomes operative; its overflowing may be perceptible in some muscular motions or tension; or it may be voluntarily directed to some consciously intended action. The muscular action resulting from a memory is an induced current; memories, however awakened, become thought in reaction upon the physical mechanism, a reversing touch, as it were, of the mind upon its bodily condition. Both a perception and a memory may set the motor mechanism going; but the former does so directly, the other indirectly; in the one the physiological process is carried from end to end through the

intermediate movement only of the mental elaboration of the visual image; in the other through that *plus* the existence of another, a mental image previously formed, and the correlation of the two in the consequent motor-reaction. These several factors are involved in the process of recollection and its consequent influence upon one's action. When we abstract from memory its perceptive initiation and its physiological resonance, pure memory has, as its remaining character, an ideational aspect. It is by no means to be regarded as a weakened sensation, a washed-out perception. It will draw to itself other elements of consciousness, uniting with which it becomes prepotent, and gains range and power far beyond the limits of the original group of sense-perceptions from which it may have sprung. One of Bergson's striking remarks hits the core of the matter: "Most psychologists," he says, "see in pure memory only a weakened perception, an assembly of nascent sensations. Having thus effaced, to begin with, all difference in kind between sensation and memory, they are led by the logic of their hypothesis to materialize memory and to idealize sensation." [1]

5. The distinctive significance of human memory appears as we analyze further its contents and processes.

To recollect is not a simple function; it is a succession and involution of three forms of activity, which introspectively may be distinguished and, to some extent, experimentally verified: viz., an act of retention, of recall, and of discrimination. An image, which once entered the field of consciousness, and passed out of it, has in some manner been so retained in the organic possession that it may come back again into the field of consciousness. Its recall over the threshold of consciousness may be effected quite spontaneously either by a repetition of a similar sense-stimulus or the appearance of something in the mind that was once associated with it, the one drawing

[1] *Matter and Memory*, p. 179.

the other after it into recognition. Or it may be found and brought back by a direct effort of searching for it. But by none of these means could a past image have been recalled, unless it had been in some way first caught and held fast within reach of the mind that recalls it. Recall based on retention is a primary fact of the memory process to be accounted for. Physiologically we must search for the means of it in the higher central organs; there is no sign of voluntary recollection to be found anywhere along the sensory conductive paths.

Besides retention and power of recall, the third characteristic of memory appears in the recognition of an object present in mind as related to some previous experience. This is not merely a perception more or less general of resemblance or identity between two objects, both which may lie visibly before us; it is also a cognition of their relation to each other in time as well as in space—it is re-cognition. One revisits, for example, the scenes of his childhood and sees once more the gate, the yard, the house, where he lived many years ago. What he sees is simply the house and its surroundings; what he remembers is the home as once he knew it, the gate on which the children are swinging, the faces long unseen looking once more out of the windows—the light of other days is over all. It is the same, he says, that it used to be; yet what he sees is not the same scene that would be mirrored in the eyes of a passer-by. It is the home abiding in his heart that he sees, that quickens his pulse beatings, and brings tears to his eyes as he looks—and lives again in his past.

Thus it may be said that memory has to do in time what perception does with objects in space; it puts together realities that time has separated, and beholds them as a whole in one intuition. While perception affords an optically reduced presentation of a given situation, memory gathers together different moments of experience as

a present field of consciousness. What is it in memory that does this? What personal power is this over experiences which are now not existent in space, but still are existent in our consciousness of succession in time?

6. Another character of memory appears in the ends toward which its activity tends. Biologically considered, the end or vital use of sense-perception is some muscular reaction of advantage to an organism in the struggle of life; so indirectly memory, likewise, is useful, and its origin may be traced back to its utility. From the point of view of the naturalist, memory, like other animal functions, may be supposed to have arisen because it had to be developed in order that life might go on and not fail on the earth.

We should follow the evolutionist so far as he can retrace the natural history of mental life; but admitting such utility of memory in general to the conservation of life, the especial point to be marked here is that memory may be directed toward an end beyond any immediate utility; it does not necessarily occasion a direct reaction of the motor-system. Memory performs an intermediary and preparatory service; it will recall the past as useful for future movements far beyond the requirements of the present. It is a recall of past experience that may inhibit, modify, or intensify a movement suggested by a direct perception of something in the environment. Thus, so far as it acts on the motor mechanism, it acts selectively and for immediate ends. But in its utility for our life memory is not only a looking backward, but also an anticipation of future ends. Our best memories are our truest prophets. In its immediate and most nearly automatic use, as possibly in the animal world, memory is comparable to the tempering and bending of a spring and the compression put upon it, ready to be released, as the touch of some demand may let go the movement to be made. Memory with us is so much means for future

work. It is in the development of mind the acquisition of capacity to learn, and for ulterior purposes. As such it has unique character, and when once acquired it was destined to play a great rôle in evolution.

Such being the distinctive characters of the power to remember, how far can we reach from a purely biological point of view an understanding of them?

There can be no doubt that animals have acquired retentive and discriminating memories up to a certain degree, and that they can learn somewhat from repeated experiences. A lower kind or degree of memory, dependent on physiological conditions, but without stimulus or response from higher, ideational centres, might account for the more intelligent animal habits, and also the limited kind of education which they are capable of receiving. It has been observed with much truth that "the great advantage of man over the higher animals is not so much in the fact as in the method of his learning." A child learns by repeated movements; so does an animal. An awareness of movement, a feeling of overlapping motions, one lingering and taken up into another motion, and a consequent grouping of similar movements in some sense of continuous action, very likely may be the physiological beginning of memory both in animal and human life. But the animal life seems to enter only upon an elementary method of learning, and to come to an end of its capacity not far from where it began. The child goes on; at the end of its physiological experience of associated movements, it presses on in a new method of self-education; for it develops the capacity of holding together in its consciousness these varied movements and experiences and using a succession of them in one purposeful act. The child acquires a definite time-sense. Besides having a certain elementary sameness of sensation, prolonging itself through a succession of movements; besides learning to act in habitual response to

stimuli that may set going this train of movements; the child becomes possessed of a power to grasp the series of movements as a whole, to have an idea of them in their interrelations as parts or sequences, and hence intentionally and intelligently to use them and other co-ordinated motions for the end of obtaining what it desires. The child, that is, forms ideas and uses ideas for the attainment of what it wants. Thus the purely physiological limits of its education are broken through, and an individual person becomes capable of learning indefinitely. The dog, if its life were prolonged indefinitely, would still be a dog; the child in time will put away the things of a child; if its life is prolonged into the hereafter, it may become as a son of the Highest. In this connection Mr. John Fiske's reason for the prolongation of human infancy in comparison with the quickness with which the higher animals come to full possession of their powers is an illuminating suggestion. The physical and instinctive growth of the infant is retarded by the necessary slower development of the mental powers, to which the body is to be made subject. Man, just because he is a creature of finer nature and higher promise, requires more care and more time for his maturing. He has not merely to find himself at once as animal, but in time to come to know himself as a man.

So far, then, we have followed the physiological approach toward the problem of memory; have we found thus its inner secret? The same question-mark that has met us thus far at every turn of the inquiry meets us after each one of these specific characters of memory which we have just described. When we ask, How are memory-images retained? the physiologists must answer frankly: We do not know. Physiological psychology comes to a blank wall at the end of a blind alley. It leads up to certain areas of the brain as the regions in which the sensori-motor mechanism of perception and the associative func-

tions may be located; but not a gleam of light is thereby thrown upon the means by which perceptions are retained, recalled, and re-combined in memory.

The first hypothesis to suggest itself that memory-images are stored up as physical contents of special cells is too crude and gross to deserve serious notice. Anatomy discovers no card-catalogue pigeonholed in so many cells of the brain. Can the retention of myriads of fleeting impressions be imagined through more or less permanent ultra-microscopic modifications of the molecular constituents of the cells? Can memories be retained as cell habits? It is true that a minute living cell contains within itself a marvel of potentialities, the depth and extent of which biology has but partially disclosed. In view of its known potencies one might be ready to exclaim: To the living cell nothing is impossible! Nevertheless even its marvellous prepotency is limited in its direction; it may only work along certain predetermined lines; its energies are not transferable in all directions, nor transformable into everything of which we become conscious. A germ contains, as Weismann would hold, determinants of specific hereditary forms. But that is conceived as its distinctive and fixed mode of structure or form of energy. It is not the impression of one thing after another laid upon it, to be peeled off on demand. The permanent retention by the germ-plasm of its specific form and function, which may be modified only by selective transmission lies at the basis of heredity. But germ modifications and a collection of images in a cell are quite different conceptions. And when we consider that the cell, while retaining its original form and acting according to specific determinants, is itself subject to constant change, that it is never a stagnant pool, but that there ever flows through it a stream of protoplasmic material, it becomes as difficult to imagine countless impressions of the past to have been imprinted and over-

laid upon its substance, as it would be to suppose that a flowing stream could retain the reflection of every momentary gleam of light or passing shadow on its rippling surface.

Besides this, were any such hypothesis of cortical retention of past impressions conceivable, the hypothesis is rendered dubious by certain phenomena of forgetfulness, as in various forms of aphasia. In such cases what is lost does not appear to be words stored up in brain-cells, but rather the power to connect auditory sounds with other sense-organs and appropriate responses. It is not the loss of memories, but some break in the memorizing connections that seems to be indicated in such failures to recollect.[1] We accept as physiologically true Bergson's remark: "The brain-centres are no more the depositories of pure memory, that is, of visual objects, than the organs of sense are depositories of real objects."[2] Similarly Professor J. R. Angell observes: "Recognition seems to be an ultimate and unanalyzable property of consciousness."[3] But he falls into a misleading method of expression, too common among recent psychologists, when he adds: "Even if we find it impossible, as we sometimes do, to recall a certain idea, we must believe that the experience in which we originally encountered it has left its indelible impress upon the substance of the brain," etc. (p. 231). This is merely metaphorical language. The brain is not a static, plastic substance, like wax, on which impressions may be "embedded." And even if it were, the added difficulty would arise of conceiving how one impression after another of myriads of them could be uncovered at will without destroying overlying imprints. So far, then, as mental retention of images is concerned, there seems to be no adequate physiological explanation of memories.

[1] We shall return to these losses of memory later, p. 162.
[2] *Op. cit.*, p. 187.
[3] *Psychology*, p. 225.

The difficulties in the way of a purely mechanical theory of memory continue to multiply when we take into consideration the other two characters of memory which have just been mentioned—the power of recall and of discrimination. These, however, involve other mental functions and may be better understood when discussed later in connection with the association of ideas. The powers of recall and discrimination are outstanding facts in psychology. Recollection is a conscious attack upon unconsciousness; it is a summoning of other memories in the conscious effort to recover a lost memory. What is this awareness of a lost memory for which we search until we find it?[1]

We mark, then, in memory another noticeable sign of meaning, as we pass on along the trail in the direction to which it also points.

IV

Energy in Thinking

The first distinct thought is an epoch in the life of the infant. The first clear thought in which man came to himself in some far-off time marked the beginning of a new age on the earth. It was as epochal as the first stirring of life in matter. In neither event is there any lack of continuity, any failure to connect the formed with the forming in the process of evolution, as the biologist would say, and, as the idealist would say further, in the harmony of the Divine thought which is objectified in the created whole. This new kingdom of thought, like the kingdom of heaven, comes without observation. From a varia-

[1] "It is found," says Wundt, "that reproduction of ideas in the strict sense of renewal in its unchanged form of an earlier idea, never takes place at all, but that what really does happen in an act of memory is the rise of a new idea in consciousness, always differing from an earlier idea to which it is referred, and deriving its elements as a rule from various preceding ideas."

tion seemingly slight from mere animal awareness of being there has proceeded a vast and ever-increasing significance and worth.

At the starting-point of the interpretation of what has been given in the power of thinking, we are to keep in mind this fact: thought has its roots in and its vital connection with the whole world of outward reality from which it has sprung. It cannot, therefore, become absolutely foreign and unrelated to external reality. At its highest reach and ripest fruitfulness it remains in its root-principle one with nature. It may not deny its kinship. From the first germination of thought in the soil prepared by nature for its upspringing mind has grown to its maturity, reason has risen to its superiority, and there has appeared in its season the blossoming of poetry as well as the full fruitfulness of the tree of knowledge. In very truth the tree of life has become the tree of knowledge. This primal unity of origin, which modern scientific philosophy assumes, is enough to warrant us in excluding the idea of an ultimate dualism between mind and body; or, to put it in its most general statement, between the reason of man and the reasonableness of the world. The ultimate reality in both is one, and reasonable.

To think is also to act, although the thought-action may not betray itself in visible motions. To some extent the energy exercised in thinking often overflows into muscular reactions, as in expressive gestures, or as an act of attention will be felt in a certain physical tension, or may be observable in a strained attitude of the body. Thoughts of specific objects may occasion involuntary movements corresponding to the sensory stimulus which their presence in the mind excites; as when one is thinking of a favorite morsel of food, or a familiar tune, he may smack his lips or begin to hum the melody. That thinking is action, and often intense action, is witnessed by such overflow of energy into the efferent nerve-paths, or the

resonance of it in other cerebral centres of the sensori-motor organization. The expenditure of energy in the act of thinking is known, likewise, in our consciousness of effort while following a course of thought; it taxes us to do so. We have to concentrate our mental forces to hold fast an abstract idea, to pursue closely a line of reasoning, to grasp clearly a conclusion. We rise from the effort with a sense of fatigue greater sometimes than any weariness we may have felt as a result of active physical exertion for a similar length of time. This loss of energy in thinking is measurable by the expense of physiological energy. The significance of this familiar experience of thinking as action was too much overlooked in the older metaphysical psychologies, as it is frequently misinterpreted in the modern physiological explanations of mental activities. When ideas have been regarded as so many mental states, and the laws of thought as though they were an external framework for mind, instead of regarding thinking as a living process, and its laws as modes of mental energizing, this has imparted to mental philosophy a certain unreality, and its value has been reduced to that of an autopsy of a dead consciousness. On the other hand, laboratory observations of descriptive psychology lead but a little way into self-knowledge unless they are also introspectively searched and interpreted in their values for life.

In the external world energy exists in two forms, potential and kinetic. Reflective examination discloses something of the same kind in the world of thought; thinking-energy may be both potential and kinetic, both a stored-up energy and an energy manifested in the action of thinking. It is potential in the elements of the mental world, such as sensori-motor tendencies, instincts, percepts, habits, memory-images, concepts, and those ideas which the older psychologies regarded as innate. It is kinetic in every act of thinking; we expend energy when-

ever we consciously think. The conception of interatomic energy (with which modern physics has made us familiar in its account of radioactivity) may be borrowed to lend theoretical distinctness to our conceptions of mental functioning, and may be carried still further as an analogy of aid in construing the higher intellectual processes. Regarded in the light of this analogy of the atom as a field within which vast potencies are massed, so a sense-perception or a memory, as we have already observed, may be conceived as anything but a passive affair. The potential energy latent in consciousness of a dear memory or a great thought may be instantaneously realized in an act of devotion, or become the inspiring power of a noble deed. In the world of mind an idea may contain radiant forces as measureless as an atom of radium in the world of matter.

In the process of thinking three phases may be introspectively observed, and to some extent subjected also to experimental determination: viz., the coming into the mind of ideas already formed, the assuming of definite relations of these ideas to one another as objects of thought, and the relating activity of the mind. The three facts to be accounted for are the ideas, their relations, and the energy expended in putting them into their relations. In the preceding pages we have been occupied with the elementary part of this cognitive process; it might be called the natural history of the primary contents of personal consciousness.[1] Our knowledge of the genesis and development of intelligence is enough to assure us that we can accept our primary concepts at their face value as representing a genuine world. Ideas, so far as they are verified in action, represent actualities, and will not be disowned by the nature of things. As the pragma-

[1] For a complete and notable treatise on this subject the reader is referred to Mr. Hobhouse's recent volume on *Development and Purpose*, especially his discussion of the development of ideas.

tists tell us, our current ideas have value in exchange; in the daily transactions of mind with the external world they are tried and proved; they are not counterfeits of our mental coining.

The second of the phases of thinking just mentioned consists of the relations assumed by objects of thought in our mental dealing with them. These are the judgments that we form, the combinations which are put together in our concepts, and the order that they may assume in reasoning. It is the business of logic to deal with these inter-mental relations of ideas and their laws of association and combination. But in that field, which from the philosophies of the ancients has been under cultivation, it is not necessary for our purpose to linger. We pause only to take notice of the fact that logic, as modern writers are reconstructing it scientifically, leads away from any mechanistic conceptions of the relations of ideas. Logic is to be dynamically rather than mechanically conceived. It is not to be treated as a constitutional framework of mind, in which ideas are arranged like things; its laws are expressive of original modes of mental behavior, according to the conception of logic which some recent writers hold. Thus Bosanquet says: "By logic we understand, with Plato and Hegel, the supreme law or nature of experience, the impulse toward unity and coherence (the positive spirit of non-contradiction) by which every fragment yearns toward the whole to which it belongs and every self to its completion in the Absolute, and of which the Absolute itself is at once an incarnation and a satisfaction," etc.[1] "It is the strict and fundamental truth that love is the mainspring of logic" (p. 341). So McDougall says of the development of ideas, their discrimination from general to particulars, and their successive relations, that "the mind does not play a passive part in the formation of associations." "It relates ob-

[1] *Individuality and Value*, p. 340.

jects in so far as it is interested in them in that relation." In association, when two objects are perceived as related, "the mere spatial relation of the two visual forms is of no interest. There is something in that relation that exercises 'my interest'; out of all the details of the scene presented to my vision, 'my mind' seizes upon these two objects and their relation." He illustrates "the impossibility of describing a simple process of association in terms of sensation and imagery." [1]

The third characteristic of thinking lies directly in the line of our inquiry—the relating energy of the mind: What power is this which enables us so to put things together in thinking of them? What is the nature and meaning of that relating activity of which we are conscious when we are thinking, by which things are not merely thrown together in our minds at haphazard, or by outward suggestions only, but deliberately and in an orderly sequence? In a course of thought there seems to be going on under our introspective eye a specific process, manifesting a distinctive kind of energizing: what is it? Again our answer must be, we can tell what it means only by what it does. The behavior of mind in conscious thinking is certainly unlike any other kind of behavior of which physicists or biologists can give us information. It is clearly not identical with a nervous reflex, or a reception of a sensation, or with the flashing into consciousness of a perception. Nor is it the meeting of perceptions and re-presentations in memory. We find elements from all these experiences combining in our thinking, and symbolized in our words; but in none of these do we catch ourselves in the act of reasoning—of relating the contents given in consciousness. That is a special kind of mental exertion. We are doing something with the contents presented in our minds when we set them in order as we think of them; and we are quite

[1] McDougall, Wm., *Psychology*, 101.

conscious of the expenditure of mental energy when we think hard. A differential mark of the energy manifested in thinking is this: reasoning is a selective process, a voluntary selective action, under mental laws, of objects to be compared in a judgment or unified in a conclusion. This selective process leads also to further definition of the relations to one another of successive combinations of ideas, and involves, moreover, some determination of their relation as objects of thought to the mind that thinks them. Thoughts are not merely thoughts, they are *our* thoughts; we are the reasoners; reasoning is a personally conducted tour. The act of thinking is quite a voluntary act, involving attention and control. We set our minds to the task presented by the problem. We hold ourselves to it sometimes with much effort. We will think it through. And in the world of thought, once we have fairly entered it, how free we may become! The earth cannot keep us down; no horizons shall shut us in; seas cannot separate us; the power of thought may lift the mind up as upon wings, and leave the whole world far beneath us. In intense thinking the body passes out of mind, as though for rapt moments of thought we were disembodied spirits. Of such freedom and exaltation of mental vision one has said: "Whether in the body I know not; or whether out of the body I know not." Absent-mindedness is not vacant-mindedness; it is a peculiarly human power of self-concentrated thought. An animal may be caught unawares by a noiseless foe; but no animal stumbles to its hurt through absent-mindedness, as man when most within himself in thought may lose sense of the outward world.

The psychic energy in thinking is further to be differentiated from any known physiological reactions in these particulars:

1. As an act of judgment. In judging two actions occur: there is a backward and forward swing, as it were,

of the mind, an analytic and a synthetic motion. Now, this might be called a kind of mental metabolism; a judgment might be described in a physiological manner as a catabolic and an anabolic action, a breaking down of a complex mental unit and a recombining of its elements. But the analogy extends only to a differentiation of the acts as already acted, not to the nature of the acting. No physical form of energy is comparable to the selective energy, no enzyme to the mental ferment, by means of which a given mental content is analyzed and synthesized; the physical has only symbolic value in explanation of the mental. Mental catalyzers cannot be identified with chemical enzymes, although their mode of acting or results may be comparable.

2. Mental action in coming to a judgment is not an action measurable in space. The ideas combined have no extension, and the act of comparing ideas has no necessary relation to positions in space. It is a frequent fallacy of mechanical and biochemical theories of mental phenomena to confuse resemblances of processes with identities of causes and effects.

3. The forming of a judgment takes time, as experimental psychology may ascertain; but to take time to relate objects in thought is not itself a mere ordering them in a temporal sequence. They are not compared on a time-scale, but on a scale of values and ends. The ideas may be ideas of things occupying relative positions in space or following one another as events in time; but in either case the comparing action of the mind is *sui generis*.

In regard to time the mind might be compared to a traveller within a railway car; looking out of the window, all things are passing; looking at conditions within, all are motionless; that is, timeless. The sense of passing time measured in relation to a succession of outward objects is not the same as the contemplation of inner rela-

tions. In judgment objects are held fixed in mind, stationary in relation to the mind, and their interrelations determined as they affect differently the mind. An exception to this statement might be taken in the comparison of percepts of external objects. In comparing two objects, as two trees or houses, do we not bring them spatially into juxtaposition, or superimpose lines and forms one upon another? Certainly, yet even here the act, as we are immediately aware of the comparison, is not an act by which the one object is brought from one position and placed in another; the comparing is the seeing two outward objects in their mutual relations as objects existing in space. In abstract thinking spatial relations may vanish entirely, and ideas compared as ideas, a time element only being involved in the logical sequence, although not identical with it.[1]

V

Feeling

Thus far in seeking for the meaning of the personal life we have neglected an element which is at once evanescent yet pervasive, hardest to catch in a philosopher's net, yet always with us—the feeling or tone of self-conscious life. Many psychologists call it the affective side of man's nature. Some feeling accompanies all mental activities; it is bound up with sensations; it plays in and out among our perceptions; it throws lights and shadows over our memories; it will subtly interweave its colors through the whole warp of our reasonings; at times it will rise and draw into its current all elements and energies of our being in some great flood and passion of soul. Feeling is itself most changeable yet most persistent, transformable

[1] See Wundt, *op. cit.*, vol. I, pp. 113; 153; 422 *seq.* Compare Bergson *passim* on confusion of time with space.

at slightest touch of a passing incident, yet deep as life, and stronger than death. One moment feeling lies latent, another it is intensely awake; seemingly born of the senses, yet giving birth to the idea of duty; delighting in the beautiful, and rising at times above all clouds and darkness to supernal trust in God. Moral and religious feeling in the heart of man is witness of his birthright as a son of the Highest, and prophet of his immortality.

Is this a purely subjective witness? Is feeling simply our personal tone and temperature? From the physiological side it is so to be investigated; its origin and functioning as an expression of organic conditions are to be traced, so far as it is possible to do so. After this is done, the same question will recur: Is the physiology of feeling all of our affective experience? Or does feeling in any way put us in touch with outward realities, visible or invisible? Does the feeling nature of us have any appreciable value for the cognitive nature of us?

We must start here also, as our method of inquiry all along has led us to do, from the facts of experience and the results of laboratory investigations of our nature. We shall have to determine first what are the sensuous roots of the human life of feeling.

Modern psychology has learned much of interest and of educational value regarding the connection between bodily conditions and our conscious states of feeling. To a considerable extent a natural history of the expression of the emotions has been rendered probable since Darwin took up that inquiry. By recent psychologists feeling is usually distinguished from sensation; the latter has reference to the activity of a sense-organ which is stimulated; feeling is a conscious state accompanying a bodily sensation or other activity of which we are aware. It may be called our personal attitude toward whatever may be presented in consciousness. A feeling may be a personal tone anticipating the reception of a sensation, putting

one in an expectant attitude toward something not as yet present; or it may be a remainder only from some previous experience. But in either case is it to be identified with a sensory stimulus? Our feelings are not only distinguishable qualitatively as different modes of consciousness, but they admit of degrees of intensity and are to be measured in a scale of their own.[1] Thus a room may be too hot or too cold for us, a sound agreeable or unpleasant; but the sense-perception of different degrees of temperature, or notes, is one thing, while our feeling in relation to them is another thing. When we say too hot or too loud, we introduce the personal equation; we do not observe merely a difference of quantities or intervals between objects as they are perceptible, but we note a qualitative difference in the manner in which they affect ourselves as too hot or loud for us. Some modern psychologists reduce simple feelings to three kinds, agreeable or disagreeable, the feeling of excitation or depression, and the feeling of strain or relaxation.[2]

A further distinction is to be observed between feelings which directly accompany sensation—our feeling of our sensations—and the deeper psychic emotions, which may indeed affect our whole nervous system, but which are internal feelings only slightly, if at all, excited by anything outwardly affecting us. The distinction just mentioned between sensory feelings and deeper psychic feelings seems justified by the fact that separate points on the skin have been distinguished as the seat of the different sensations of temperature, and of pleasure and pain. Pain, therefore, is to be considered primarily as a sensation, or sensory feeling, rather than a purely affective state of mind. The elementary bodily feelings may be combined in an endless variety of forms in our consciousness

[1] Cp. Bergson: "While perception measures the reflecting power of the body, affection measures its power to absorb."

[2] Wundt, *Outlines of Psychology* (tr. ed. 3), pp. 83 *seq.*

of them; as the bits of colored glass in a kaleidoscope are few, while the patterns change with every instantaneous jostle.

As personal feelings are thus vitally dependent upon sensations, though not identical with them, so likewise they are closely connected with the motor-reactions of the body. Indeed, Mr. James ventured to account for feelings as consequents of bodily attitudes and expressions; he said paradoxically: "We do not cry because we are sorry, but we are sorry because we cry." We receive, that is to say, some outward stimulus, as the sight of something pitiable; a moment of repulsion follows as a natural reaction, and the corresponding feeling ensues. But this extreme statement of the dependence of feeling upon physiological antecedents cannot be held; for "it has been shown that the muscular contractions accompanying a feeling take place in time after the consciousness of the feeling has been fully established."[1] It must, however, be admitted that the physical elements and expressions of feeling have a very large part to play in our conscious life of feeling, and that physiology has succeeded in throwing much light into the psychology of this whole side of human nature. It is quite probable, for instance, that pleasurable feelings are associated with motor-reflexes that work in unison in producing a harmonious movement; as when a repeated call is answered by a response that relieves the strained attention, and the vocal and auditory mechanisms of the person calling work at last together in a regular physiological alternation. If, on the other hand, a sound strikes across the line of attentive interest, and breaks in upon consciousness as an interruption of what we are doing, it is felt as a disagreeable sensation, and this irrespective of the quality of the sound, so far at least as it is perceived as an interruption. Moreover, so subtle are the interrelations of

[1] Judd, *Psychology*, p. 195.

feelings and perceptions, it has been claimed that the difference between colors that have a soothing or exciting effect rests on a basis of the sensational differences or feeling-tone produced by colors. It is said to be possible by using extreme variations in color quality to demonstrate changes in the rate and intensity of the heart beat.[1] Criminal psychology is proposing to test the truthfulness of a witness by the reflex action on the pulse of a sudden consciousness of falsehood in answer to a question when speaking the truth might betray him. Many of our common feelings and changing moods without doubt correspond to organic conditions and adjustments.

From these and other well-known relations between bodily and mental states, it has been assumed that feelings are entirely subjective, the concomitants of physiological processes, indirectly related to outward objects, but being in themselves "matters of personal organization." Particularly in the analysis of æsthetic feelings the physiological theory has been ingeniously worked out. The perfection of a Greek column, for instance, has been explained as resulting from a skilful modification of the column, by means of which art succeeded in relieving the optical strain that is occasioned in view of a line supported at both ends with no additional strength to hold it up in the middle.

Now, then, after we have gathered up the scientific data and received any probable suppositions concerning the physical elements involved in our human feelings, have we fully disclosed the meaning of them as we are aware of it *when we feel them?* Does any analysis of the physical basis of feeling represent the flow of feeling through consciousness? Is our sense of beauty, for instance, in our living joy in it, discovered in the most skilful *post-mortem* examination of it? It will be admitted by most

[1] Judd, *op. cit.*, p. 198.

psychologists that we are as yet far from reducing all feeling to a purely sensational process; but it may be claimed that the reduction of some phases of feeling to physiological antecedents has been carried so far that we may make the jump over the remaining gap in the further assumption that more knowledge might show nothing but physiology at the bottom of our personal feeling. Many a working-hypothesis, starting from a slight basis of fact, undoubtedly has been justified by subsequent experimental knowledge; and this physical theory of feeling might be assumed temporarily as a sufficient working-theory in mental science, were it not for the everywhere outstanding circumstances that here likewise, at the very points where further extension of knowledge ought, according to the theory, to show a lessening of the gap between the physical and the psychical, on the contrary the difference between the two seems to widen and deepen. While a general correspondence or even to some extent a scale of equivalence between physical conditions and conscious feelings has been shown to exist, it is to be remembered that coincidence in time or equivalence in degrees of intensity is not identity, or proof of identity. And at no point has experimental psychology succeeded in identifying, or in showing an approximation even toward identity between the affective quality and the sensory contents of consciousness. The divergence rather than the approximation appears in the distinction that modern psychology has drawn between the sensations that are brought into consciousness through the organs of sense, or receptors, and the tone of consciousness—the feeling that may pervade it. This distinction becomes more evident as we examine it more closely and test it by refined experimentation. We shall refer to this in another connection. At this point we observe more specifically several distinctive characters of the affective manifestation of ourselves to ourselves.

1. They possess a distinctive human quality. Our primary feelings come to us bearing a broad human mark. They are not merely our individual affections, they are organic elements of human life. They are constitutive feelings, which make us human; to lose them were to become dehumanized. The universal human passions, such as the primary social affections, the love of the beautiful, the moral and religious feelings, are rightly to be distinguished from the particular emotions, which also have their origin in the underlying nature of man, but which are our immediate personal responses and adaptations to the scenes and calls of our individual lives. These nobler human passions no doubt have themselves been formed and attempered in the purifying flame of life's strife and aspiration; they have been set in the mould of heredity; they are our personal gain from the ages past; but this method of their acquisition only adds to their human value and renders more unquestionable their spiritual significance. For they are seen to have a universal value; their attainment has been something other than a deposit of material elements. It has been a social acquisition. It has been an increase of human value won through long-sustained and unconquerable psychic and spiritual forces. These dominant human passions witness to the outstanding and supreme fact that has been realized in evolution —the humanness which is revealed in its moral value and transcendence in the heart of every true man. We shall consider this fact more fully when in another chapter we shall inquire concerning the worth of life in the most human consciousness of it.

2. The affective action of personal energy has a marked purposive character. To some extent all organic responses may be said to have this character. Instinctive action takes on an unconscious relation to future conditions, as in the provision of many species for the future of their offspring; but human feeling, rising to a higher

level of intelligence, becomes far-sighted, and with conscious prevision looks through the years to come. We not only look through time, but beyond these visible heavens; human affections may be set on things above. Now this conscious aim even beyond the things that are temporal imparts to human affection a potency which it is hard indeed to reduce scientifically to any chemistry of the affections. For one thing, it maintains a permanent inhibition over animal passions and natural instincts —an inhibitive power over nervous reflexes more direct and commanding than can easily be accounted for as a resultant of a conflict between stronger and weaker nerve currents. This moral inhibition when formed into a habit involves something besides a physiological strain under the stress of circumstances. The meeting of two neural impulses in a common path, and the habitual inhibition of the one by the other, is indeed a notable phenomenon within the body; the moral subjection of the one to the other is a victory of the spirit. Animal instinct may suffice to keep a timid bird hovering in seemingly fearless circlings over its nest; animal instinct may go so far as to lead to an unreflective death of one for another—we hardly know how far back the Creator began to fashion the heart of man, when as yet there was none of it. Fearlessness may have had its beginnings far back; but perfect love casteth out all fear. Clearly, transcendently in human love is evinced the power of self-sacrifice. In clear foresight, with deliberate purpose, in absolute assertion of a moral right to die for another, man has attained the supreme power of self-sacrifice. The presence in his consciousness of a supernal ideal will inhibit totally the organic wants that cry out in him for immediate satisfaction. By a moral determination he may disconnect, as it were, the wires that unite his higher with his lower nature, and in utter forgetfulness of fear, in the glory of his soul, he will give his body to death.

This purposive power of devotion, this ability to give up self throughout a lifetime, as well as in an act of laying down life, is a superorganic power. It is a moment of an ideational process, and evinces a psychical factor capable of binding the past and present in a purpose that renders the years of a man's life one life, and fashions it all after the power of an endless life.

In this kind of potential purpose the life of a man is not as that of the brutes that perish. Animals, so far as we can judge, do not possess a sentient body in which, as in man's, there is resident a power purposively to inhibit its own sentience; no natural history of its development can disclose the secret of the origin of this most human power. Its source lies farther up the flow of life.

We are left, then, by empirical psychology facing this unanswered question: Do we come into some cognitive touch with reality throughout the whole range of the affective side of personal life? Common sense and philosophy alike regard the feelings which we experience through the bodily senses as resulting from contact with the outward world, however differently philosophers may conceive this relation. But does such cognitive value of feeling begin and end with our being consciously affected by objects through the senses? Or does it extend from the dimmest half-perceived sense-stimulus throughout the whole range of our experience? Do the social, moral, and religious feelings, directly or indirectly, have any hold on reality? The frequent answer is, no immediate touch upon supersensible realities can be demonstrated, or cognitive value of the religious feeling be admitted; for we cannot put ourselves beyond the feeling itself, to return upon it, with a clear understanding of its meaning. Neither, for that matter, can we go beyond a sense-perception of anything in the world and say, the image in our mind is the object impressing itself upon us; although the evidence of the senses is so uniformly verified

throughout our active dealings with outward things, and at the same time is so universal, that we consider any doubts of the actuality of the things with which we have to do as only an academic question. Pragmatism is right in bidding us do the things we may do, and we shall know the truth. But why not go further and say, if at any one point a feeling, such as is given in sensation, can take us out of ourselves, we cannot deny the possibility that at other points of experience feeling may be possessed of a similar transcendent function? From all around the margin of our consciousness, the supersensible side as well as from the subconscious beneath the threshold, influences from far and near may be communicated to us unawares. We may live and have our being in the midst of unseen relations and in an order of existence not realized as yet—our consciousness pervaded by a sense of something more than eye can see or heart conceive, its subjective feelings vibrating to touch of invisible powers and its deeps of personal being moved by a supernal attraction.[1]

We raise and leave at present this question, with this single observation: It is a question which concerns those vital values that the so-called pragmatic philosophy maintains as the scale on which probabilities or degrees of truth are to be weighed and determined. Whatever, that is, proves itself to have value for the ends of living, whatever fits as adaptation of thought to conduct, bears evidence of its correspondence to reality; the unfit is the untrue. An idea is true so far as it is found to work. Judged by this pragmatic test, the higher human feelings have approved value in the conduct of life. Pragmatism, however, fails by its tests to satisfy the desire for full assurance of truth. The absolute meanings of life are not

[1] Lotze admits a comparison as valid between physical and spiritual sensation, while he holds that both are to be completed in the reason. *Grundzüge der Religionsphilosophie*, p. 3.

measurable on a purely pragmatic scale of degrees of value. The full worth of feeling in the interpretation of personal life cannot be estimated until we shall have inquired into other experiences and considered the distinctive and universal human feelings as they play in and out through the whole process of living, and have their function to fulfil in the highest development of personality.

VI

Energy as Known in the Personal Will

The will of man is an ultimate fact of nature. Will exists in us potentially when we are unconscious of exercising it; and it is manifest as kinetic energy when we become aware of ourselves as acting. The will is not a separate faculty, it is intimate essence and vitality of us. It cannot be taken out of any moment of life; it pervades whatever we think or feel or do. Will is integrating force of personality, a formative energy of character. This primary fact of will cannot be analyzed into anything simpler; nor can it be obscured in the common sense of mankind by the controversies and confusions of philosophy concerning its freedom or determination. Whatever we may think about it, will is here, an irremovable constant of human experience. It is its own witness within every man; one affirms it in the very thought in which he would deny it.

Personal energy, the willed activity of our daily life, gives reality to the conception which scientific thought has formed of energy in nature. Unless we take knowledge of ourselves as willing for granted, we have no postulate on which natural science may stand to learn how the world is moved. Will is the source of our idea of force, and the final positive of our knowledge of energy. Take this fundamental fact of personal will out of experi-

ence, and the corner-stone of all science of nature, its forces, continuities, and laws, is removed. Will in us is the measure for us of energy in the universe.

A few general considerations may serve to clear the way as, keeping the single aim of our inquiry in mind, we enter this much-contested field of philosophy—the nature of the will, or, as modern psychologists call it, "the conative structure of the mind."

We take our start from the new point of view which biology has opened for psychology. For we are thereby enabled to survey this field, as we have other mental phenomena, from an illuminating conception of the organism and organic functions. This conception does away at once with the idea of the mind as an entity possessing so many separate faculties, like so many compartments each containing specific contents, which it is the task of mental philosophy to classify and label. The biological view also greatly modifies the association-psychology, in which knowledge was first reduced to sensations as the original mind-stuff; and then subsequent mental operations were supposed to consist in sorting out, arranging, and combining this sensational material in particular concepts and general ideas according to certain supposed methods of association.[1] Both these views are left behind in the biological approach to mental philosophy. The former was rationalistic with an idealistic tendency; the latter is sensational with a materialistic tendency. Both failed to lay hold of the real, living continuity of personal being: the former by its too logical method of analysis; the latter by its too mechanical method of assembling the parts of the personal process of living. Some biologists, on the other hand, who ven-

[1] The reader who wishes to familiarize himself with the latest recrudescence of the older sensation-association theory of knowledge may find it ably delineated in Professor Titchener's *Experimental Psychology of the Thought Processes.*

ture into psychology, are in danger of carrying their descriptive method into superficial determination of the facts of consciousness. When in some instances they assume hastily that physical analogies indicate the beginning and the end of mental functioning, and that the elaborate systems of the master builders of philosophy, before they arrived in their laboratories, were vain fantasies, they are apt themselves to rush headlong into speculation, and to fall unawares into perils of metaphysics. Less contempt for the great thinkers of past ages and some knowledge of the history of philosophy from Aristotle to Kant might have enabled them to avoid such rash biological dogmatism. Notwithstanding such pitiful overconfidence, their researches in their proper domain are of unquestionable value. Modern science, taken in the large, affords a new vantage-ground for apprehending the meaning and ends of life, which Aristotle did not have for his analysis of human nature, and to which the Platonic ideas could not return from the clouds; in view of which likewise Kant's categories and antinomies might have been drawn more truly to the actual lines and movements of human experience. Hence we may seek to make a fresh start in our inquiry from a more biological or genetic point of view, as we would meet the old questionings concerning the nature of the will.

As the conclusion of an empirical inquiry, Wundt, that pioneer in physiological psychology, declares: "Such activity regarded as activity for its own self, which appears as the source of our doing as well as our being affected, we call our 'I.' This 'I,' thought of as isolated from the objects which limit its activity, is our willing. There is absolutely nothing without man, or within him, which he can fully and wholly call his own, except his will." [1]

What, then, we ask, may be scientifically learned concerning the manner in which man from his infancy gains

[1] *System der Phil.*, s. 377, 2 Auf.

this conscious sense of himself as will? The process of gradual self-possession in its main outlines may be traced; recent text-books of psychology pursue it with general agreement; and the psychology of the growing child is now becoming a popular educational discipline. A gradual acquisition of personal will and power of self-control is discernible in the earlier period of child life. At first the infant, beginning to find itself in the use of its senses and muscular movements, shows a surplus of nervous vitality, which overflows in aimless motions. The motor-paths, up and down which stimulations pass to the brain-centres and return in muscular movements, are at first indeterminate and unworn; so when the infant sees a brightly colored ball, or hears a rattle shaken within reach of its hand, its entire little body may be set in motion in response to the exciting object. The effect of the sensation occasioned by the ball or rattle has been compared to that of a sudden explosion in the brain-centres, scattering in all directions, or impelled along the efferent lines of least resistance. There is a general dispersed muscular response; the charge is fired, but not aimed. It is not as yet held within a single nerve-cylinder, and it does not go straightway and hit the mark. In this overflowing responsiveness, quite accidentally at first some motion of the arms may bring the object within reach of the hand, the fingers close and open and shut again upon it; and the child has had its first lesson in what is to be a lifelong education. That moment marks an early responsive action toward a perceived object, which subsequent trials and successes shall wear into a straight path. The grasp of the little hand on the ball acts also as an added stimulus to the eye and the musculature associated with the sense of sight. Many attempts follow until the nervous reflexes become definitely established and common paths for stimulations from several senses are habitually traversed. Consequently the waste of

vital energies in aimless movements grows less and less. Certain co-ordinations in the bodily movements become automatic as the child gains voluntary control and direction of its several members and faculties. This acquisition of co-ordinated action is quite early manifested in its turning its eyes toward an object, and at the same time adapting the movements of arms and legs to reach and grasp it; and later in the slower training of the smaller muscles and the finer nerve facilities in the discriminations of touch and taste, and the mastery of articulate sounds.

What is gained physiologically in the first seven years or so of childhood consists largely in the number of fine structural connections and organic co-ordinations for the coming ability of the man to use at will the whole bodily mechanism of mind. The full significance of this gain does not appear until later on there is cast back into this early period of self-acquisition the light reflected from the experience of the full-grown power of the educated man. But the first acquisition in child life of the power of voluntary organic control and purposive use of the members of its body is of itself enough to leave us once more face to face with the ultimate question of our personal being and destiny. What is the interpretation of this intelligent self-control, and the conscious direction of the personal organism to determinate ends? If at the beginnings of immediate and obvious interrelations of mind and body, as the infant child gradually comes to self-possession, the physiology of the process leaves this ultimate question directly raised, but unanswered, we shall hardly expect to find later on that any anatomy of our brains or physiological research into our methods of behavior will reveal the final secret of our indwelling personal energy or yield an adequate interpretation of us to our own thought of ourselves.

The psychical value of these earliest signs of a human

kind of control, and a distinctive quality of mental energizing in the activities of the little child, is enhanced by the fact, to which we have previously referred, which Mr. John Fiske has emphasized, of the prolongation of human infancy in contrast with the immediate beginnings of instinctive behavior in the higher animals.[1] For if the physiology of it were indeed the whole of the child's life, then the human mechanisms likewise of adaptive response to immediate vital needs might have been as promptly and instinctively set in motion in the infant as they are among animals; delay in development in human infancy would have been of slight value for natural selection, and a prolonged period for the child to acquire automatic control of its movements would have been perilous and hence superfluous. The slow formation of the structural organization of the brain would have proved a useless delay, inimical to survival, unless this retardation had been for some further end of life. The prolonged helplessness of human infancy can best be explained as preparation for a higher kind of life, of which in due season we become conscious.

Certain marked characteristics of human energy will appear obvious as introspectively we become aware of its working. These are to be fully taken into account in a sufficient interpretation of personality.

1. It is individualized energy of will. So far as we can catch ourselves in the moment of acting, we are aware of our acts as self-willed. We do them by an exercise of inner power that goes forth and makes the acts ours, and not another's working. This immediate consciousness of ourselves as willing, as acting, not passive, beings is a primal psychic fact, not to be obscured or set aside by any reflective questioning concerning the freedom or determination of the will.

Hardly are the instinctive reflexes established, and the

[1] *Darwinism and Other Essays*, pp. 45–48; *Destiny of Man*, p. 53.

earlier co-ordinated movements confirmed, when among the hereditary tendencies individual characteristics begin to appear. The infant, coming to itself, becomes an individual, and the individual will asserts itself in the growing child. Individuality, as distinct from racial or specific traits, if it seems in any slight degree discernible in the higher animals, cannot be said to be set deeply in animal nature. Even those domesticated animals that show the most intelligence are not so much self-trained as taught by their trainers. The early education of the child, on the contrary, is in many ways distinctively self-training. It learns not merely to control its own motions or to acquire responsive habits: voluntarily it adapts its motor mechanisms to its awakening desires; it will gain for itself the co-ordinated control of sense and muscle, of eye and ear, of fingers and of speech to enable it to do whatever it wants to do. We say the child has a will of its own. The twofold fact of the prolongation of human infancy in utter helplessness, and the growth of individuality out of it, is a mark of unmistakable psychic significance; it means some future signal victory of this personal being over the material world which has given him birth.

2. Personal action is energy consciously directed toward an end. We act in purposive relation to ends; we do something for something. At the focal point of consciousness, will and object of will are held together and the whole personal force thrown into one determination.

3. Another and striking characteristic of personal energy is that it is unified action. In willing we act with our whole selves. We may have been distracted up to the moment of willing, but an act of will makes us whole again. From every direction, by motives immediately in mind or that may arise from beneath the horizon of consciousness or descend from the infinite above, the will may have been stirred and all the energies of our being

set vibrating; but when the resolve is once taken, and the will acts, we move forth in the unity and power of our whole personality.

4. The will is pervasive, coextensive with the entire sphere of personal individuality. This is a truth of experience which has been too often overlooked in discussions of the will and its freedom. The will has been isolated in a critical analysis of the contents of experience, and discussed as though it were an independent entity; but in life we ourselves are not divided. In actual perceiving, attending, feeling, acting, we are not taken apart and analyzed; something of each power of our being is present in every state and act of ours. Conation is never absent as an element of the personal life. Even in our quiet moments, when passing thoughts flit across our minds like shadows over a landscape on a summer day, the will it is that has bidden tumultuous thoughts be still, that clears the mind of too pressing cares, and secures over the whole field of consciousness the calm air and the careless hour. And if the time for quick action comes, it is the will that gathers the forces of mind and body in one onset and brave charge for duty to be done, the full measure of a man's devotion to be rendered, if need be, and obedience to the ideal to be followed even unto death.

5. Personal energy of will presents thus the signal character of freedom. The attribute of freedom belongs not to the will in itself considered; the person in his integrity, in all his motivation, is free.

Just here we have one of the most valuable contributions that modern biology has to offer to psychology. It brings to the discussion of free will its conception of organic unity—of the organism as a whole controlling for its vital ends as a whole the functionings of its parts. This conception of the organic whole serves to lift us out of some of the perplexities in which abstract discussions concerning the freedom of the will have been confused.

It is not the freedom of the will which is the ultimate vital fact; it is the freedom of the man. Thus the method of biological inquiry leads us out of the dilemmas of philosophical treatises on the Freedom of the Will. The older analytic faculty-psychology conceived of the will as a something set in the midst of conflicting motives, and acting according to the pull of the strongest motive at any given moment—a weathercock does that amid the shifting winds; but how is the will free if it so shifts with the prevailing motive? Or would a mental chart show anything but a resultant line of motion according to the law of a parallelogram of motive forces? Either arbitrariness of action on this supposition or predetermination seems to be the only alternative for philosophy; and both are contrary to experience. Now biology has disclosed a secret of life that may help us discern more clearly the meaning and method of personal freedom. It has discovered that there is "a struggle of the parts" among themselves within the harmony and the wholeness of the organism. Individual cells may strive each for its share of the nourishment that flows through the body, and particular determinants of the germ plasm may maintain each its specific virility, while all this struggle of the parts is combined, co-ordinated, made subservient to the growth of the organic structure and the changing adaptations of the organism to its environment. Internecine strife of the parts, brought under the law of organic control, becomes the means of development, the method of progressive life, the power of individual survival. As an organic physical unity an animal may quietly graze in the meadows, leap from its enemy, or spring upon its prey. So life by unifying its forces has conquered. This knowledge which biology has gained, when carried over as an analogous principle into the domain of personal power and conduct, conceived of as a mental principle of unification, and held as spiritual law of personal

life, simplifies greatly the vexed problem of human freedom, and puts behind us the hard task of finding a free will located at some point of indetermination and conflicting motives. A stronger motive, forcing its way in upon us, does not touch the will, as though it were a trigger, and set us off; in the concentration of ourselves, in the determinant personal unity of our thoughts, habits, desires, memories, and hopes, we live and act, we go to our day's task or let ourselves rest in quiet sleep when our day's work is done. *We* are free, not *from* our thoughts or motives, but with and through all our thoughts and motives, in the personal conduct of our lives. Whatever difficulties may remain, or further question arise, we escape from much philosophical controversy over an abstract freedom of the will by the help of this vital view of personal life as one continuous activity, a real self-unifying energy, the actual development and behavior of the personal organism as a whole. The problem ceases thus to present the old metaphysical dilemma: How can will be free to choose among conflicting motives? It becomes part of our final interrogation of nature: How can vital spontaneity enter into material order? How can organic adaptation find place among mechanical forces? How can the ever-advancing point of life press on and on to higher issues and reach spiritual ends?

We are concerned, however, in our immediate inquiry with the experience of personal freedom only so far as it marks another stage of evolution with its unmistakable psychic sign; we continue, therefore, in the direction to which it points toward our utmost possible apprehension of the meaning of personal life.

It is one of Bergson's striking remarks that "all determinism will thus be refuted by experience, but every attempt to define freedom will open the way to determinism."—(*Time and Free Will*, p. 230.) The first part of this statement is true because,

as just observed, in willing one acts as a personal unit, and the experience of self in willing is not questioned in the act of willing, whatever afterward we may think about it. Freedom is a problem of philosophy, not a question of real life. What we are conscious of as free will is the "inner dynamic" of personality. The other half of the remark, that nevertheless any attempt to define freedom will open the way to determinism, is true in so far as in order to define it we must first put it into some conceptual form, and when we do that the very life of it slips from the logical analysis of it; it is like a stained section of a biological cell, not the living thing itself.

While we may not further define freedom of will positively, we may negatively determine that it is not like some other conceptions. Thus free action as progressively experienced does not resemble the swinging to and fro of a pendulum as a result of some mechanical escapement—personal free action is a "dynamic becoming." The law of physical conservation may be an analogue of a law of psychical conservation of energy; but each will work after its own kind. The one we observe in the world without us to be mechanical; the other we experience in the world within us to be psychical or of a spiritual order. It is forcing analogy into unreality to assume identity of laws in different orders of being. Bergson points out a distinctive mark of the order of personal action which differentiates it from the mechanical order; the latter is reversible, the former is irreversible. We can recover mechanical energy through a series of transformations; we never can live over again our past. Conservation of physical energy assumes its perfect reversibility without increase or loss; psychical energy permits of increase or loss; there is no law of exact equivalence in the succession of events in human consciousness. We are always becoming personally something different, and never are what we were. Flow fast, or flow slow, the stream of personal life flows on and on; and does not return upon itself. Life for us is not a closed circle, but motion toward an endless, an infinite something.—(Bergson, *Time and Free Will*. pp. 150 *seq.* and *passim.*)

CHAPTER IV

THE RELATION OF BODY AND MIND

In the preceding chapter we have found given in experience both psychical and physical factors, neither reducible to the other; but, nevertheless, in body and mind we live and act as personal unities. What, then, is the relation between these two? How are elements so unlike to be conceived as working together in our life and conduct? Do we exist as souls that have bodies, but which are separable from embodiment? Or how is this apparent dualism of mind and body to be resolved? Descriptive psychologists tell us that this question is not their affair; they have to do only with the behavior of the human organism, and with manifestations of mind in the body, which can be observed apart from any theories. It is profitable that in this way, apart from all human interest in ourselves, and irrespective of any ulterior consideration, psychological studies and laboratory experiments should be scientifically pursued. But the human interest presses hard after the scientific hunt, and at any moment one comes back to the old questions that have ever been in the mind and the heart of man: What is the value of my life? What is its full worth for me? Are we scientifically permitted to speak longer of our own souls? Mr. James consents in a preliminary way to speak of the soul, although he remarks "that readers of anti-spiritualistic training and prepossessions, advanced thinkers, or popular evolutionists, will perhaps be a little surprised to find this despised word now sprung upon them at the end of so physiological a train of thought. But the plain fact is that all the arguments for a 'pon-

tifical cell' or an 'arch-monad' are also arguments for that well-known spiritual agent in which scholastic psychology and common sense have always believed." [1]

More or less materialistic imaginations still linger about the idea of the soul, which render it a doubtful word for use in a precise scientific psychology; we may go as far as our inquiry thus far has brought us, and no farther, if we designate this factor of life, which is recognized in our self-consciousness, as the psychical constant. We have, then, directly confronting us the dualism between the physiological system and the psychical constant in the unity of personal life. How can any direct interrelation or transmission of energy be conceived of between body and mind, which have, so far as may be discovered, apparently no localized points of contact or quantitative connections?

Now, it should be kept in mind as we have already insisted, that whether we can conceive or not how it is, the fact remains that we are doubly conscious of ourselves both in body and mind as personal integers; we do not act as disembodied spirits. This dualistic puzzle which we have made for ourselves is a philosophic one; when we have reflectively once taken ourselves apart, it becomes a puzzle to understand how we were ever put together. Whatever our life hereafter may prove to be, we exist here and now as embodied wholes. The personal integration of mind and body is possible because it has been done. It is the heritage of our being from nature, however philosophers may seek to divide our inheritance. From the failures of philosophers to understand this dual unity of being, and the scepticisms resulting from them, it is well to return again and again to our knowledge in experience that we do so think and live and have our being.

Accepting thus at its face value this primal fact of our

[1] *Principles of Psychology*, vol. I., p. 180.

experience of our personal unity, we turn now to consider some views of the relation of body and mind, which are still extant in the philosophic field, which should not be passed by unnoticed in our inquiry.

One view is the so-called double-aspect theory. Mind and body, it has been held, are two aspects of the same entity. Looked at from one side, it is physical; viewed from the other side it is mental; body and mind alike are manifestations of one and the same substance. This is but throwing a bridge of words over the dualism between the two; the one substance is unknown save through these manifestations, which remain as opposite as ever. The gap is concealed, not closed. And the further difficulty is added of conceiving what the substance is that can have this double aspect. The double-aspect theory has been brought into psychology from metaphysics; it can hardly be said to be a native growth in the psychological field. It comes from the monism of Spinoza; but at this point it would carry us too far aside from our main course to enter into the discussion of his conception of the one substance with the two attributes of thought and extension.[1]

Another theory which restates the problem, and then drops it, is that of a parallel action of mind and body. This is now a more prevalent view among physiological psychologists. It is held in several somewhat variant forms. It is not a view for which any direct evidence from consciousness may be adduced, as we are never aware of the concurrence of brain changes with the passing of a thought through our minds; but it is suggested by some physiological facts and experiments. It has the merit of affirming the existence of both factors, the brain

[1] This theory of late is not so much in evidence among psychologists. Huxley in support of his idea of the human automaton was inclined to it; for full presentation of it, see Bain, *Body and Mind*, and Lewes, *Physical Basis of Mind*.

changes and the mental processes; and it does not throw a mere bridge of words across the dualism of mind and matter. It also recognizes their inseparableness; we exist as both. It conceives of body and mind as connected with each other somewhat as the two rails of a track, running along always parallel to each other, so that motion along one corresponds point by point with motion along the other. Break either rail, and the entire train of thought is wrecked. This parallel action of body and mind has been compared to the two sides of a bow, the inner and the outer, which act together whenever an arrow is shot. For a purely observational psychology, confronted with the task of determining and classifying the phenomena of mind, but hesitating to sound the deeper problems of personal life, this view may seem to be a good working hypothesis; but when one endeavors to work it thoroughly out, he soon finds himself among difficulties. Provisionally, however, it has been accepted by some psychologists who are far from being materialists in their philosophy. William James, for example, acknowledged the "logical respectability of the spiritualistic position," and regarded empirical parallelism as "certainly only a provisional halting-place"; but he stood by it as the "simplest psycho-physic formula," and, stopping with it, would have his psychology remain "positivistic and non-metaphysical."[1] He tells us that he would avoid "various confused and scattered mysteries" by asking: "Why not 'pool' our mysteries into one great mystery, the mystery that brain processes occasion knowledge at all"? But James was too human a psychologist to keep his vital interest in real life from overflowing the limits of this theory at many turns in his thinking.

The principle of parallel action was adopted by Wundt, although in a modified form which has occasioned much discus-

[1] *Op. cit.*, p. 182.

sion. He regards it as tenable only from an empirical point of view. He says that it "is raising arbitrarily and in a self-contradictory way two essentially different forms of scientific analysis into an idea of unity which corresponds neither to the empirical nor the philosophical demand when this empirical principle is transformed into an ontological one."—(*System der Phil.*, vol. I, p. 417; also II, p. 178.) Moreover, Wundt does not extend the principle of coincident action to all the bodily and mental processes, as it is necessary to do when it is held to be a sufficient principle of the relation of mind and body. "There is," he maintains, "only one experience, which in some of its components admits of two different kinds of scientific treatment: the one mediate, that which relates to the objects which are known in their relations to one another; and the other immediate, that which is in our consciousness immediately given. So far, and so far only, as there are objects to which both these forms of treatment are applicable, the principle of parallelism requires between the two processes a relation at every point. But this principle does not apply to those contents of experience which are objects of scientific analysis alone, nor to those which go to make up the specific character of psychological experience." And among these latter we must reckon the characteristic combinations and relations of psychical compounds and relations. Thus, for example, the elements which enter into an idea of space and time stand in a regular relation of coexistence and succession, in their physiological substrata, as they belong to the sensational side of our experience; but these physiological processes cannot contain anything that goes most of all to form the specific character of our ideas of space and time. Moreover, the two concepts of *value* and *end* are results of psychical combinations, together with affected elements related to them, and they lie entirely outside the sphere of experience to which the principle of parallelism applies. Wundt holds accordingly that the principle of psycho-physical parallelism, while having an incontrovertible empirico-psychological significance, leads necessarily to the recognition of an independent psychical causality, which is related at all points with the physical causality, and can never come into contradiction with it, but which is different from it,

and has its own fundamental laws of relation. See also his principles of "creative synthesis," the law of spiritual development, *System der Phil.*, I, pp. 302 *seq.* For example, I read in a book on psychology these words: "I blink without knowing it, and cannot help blinking." Instantly I begin to blink, and continue blinking several times rapidly, until I cease noticing it and begin to think about it. Now what was the stimulus that on reading these words set me blinking, and then, when I thought about it, inhibited the process of blinking? Obviously it was not a sensation, as of a bright light against which the eye reacted; nor was it any immediate sense-stimulus. The stimulus came with the apperception of the word, blinking, through my conscious attention to the word. However the idea itself was awakened, it was through the idea that the sensori-motor mechanism was set in action, resulting in my blinking. Is this some kind of interaction? The induced blinking was not merely a reflex motion without consciousness, as the twitching of the eye in a bright light. It was a sensori-motor process, excited by the apperception of a word, which in turn was a compound of pure perception and meaning or memory. Then that stimulus was transferred into an action of the eyelid; was this transference of energy through consciousness, or was it only attended by consciousness? Was the mind an actor or only a spectator of a process, which was partly without consciousness, yet at the same time in consciousness? In the one case it would be interaction; in the other some hypothesis of parallelism.

A third view of the relation of body and mind is the theory of their interaction. This is the ordinary, common-sense view that the mind in some way acts on the body, and the body on the mind. We think that we experience this reciprocity of mind and body in every-day life. Science, however, is apt to lead us far beyond our naïve ideas of things; and this common idea, like many others, cannot escape scientific scrutiny. How can interaction between such incompatibles as body and mind be conceived? How can it be admitted unless it can be

brought under some law of mutual action? Any speculation that may help us visualize what is given in immediate experience, is a welcome visitor to thoughtful minds. In the effort to apprehend the mode of such interaction we soon pass beyond the limits of knowledge of either; yet there is one service, though seemingly slight, but reassuring, which may be rendered by closer examination; it may locate difficulties and so put aside misconceptions which otherwise would leave us in hopeless confusion and contradiction in our experience of ourselves. Thus in this case the fallacy may be removed which is latent in the maxim that like can only be influenced by like. It is true in the physical sphere that quantities have a common measure, as they are all of a similar nature. Beneath the sequence of events in nature we put the idea of a common substratum or medium in which all changes occur. The material units, of which the equations of the physical order are the combinations, may be whatever science may take them to be—an atom, a vibration, an electron, an unknown x of the mathematician's symbolism of the material universe. A common structural unit or element once assumed, everything else naturally follows; the relations of antecedent and consequent, and the transformation of energy become possible ideas, as well as the law of conservation of energy within a closed system. It all becomes a process and law of like sequences, of equilibration of motions, to which theoretically the mathematical calculus is equal. But with this presupposition of physical science firmly established in our thinking, we are brought up in the mental sphere with a sudden stop by the fact that a brain-cell has dimensions and mass, while a thought has neither extension nor substance; and there is no point between them, so far as can be seen, for action and reaction.

This seeming difficulty, however, is located, and may be passed by as a side issue, in the following way: First,

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it is to be observed that the laws of physical causation and the conservation of energy are laws obtaining in a closed system, and hold good of the sum total of its matter and the interaction of its parts. But it is a pure assumption to infer that the same laws are necessarily true of the relations between another system of a different order and the closed system. Maxwell's familiar hypothesis of the "sorting demon" is a sufficient answer to this assumption. And one order of existence, closed so far as its own motions and sequences are concerned, may be also a part of a larger system, an order of existence comprehended in another order of forces that may react upon it, and to which it may be pervious—a vaster order in which it may be held vibrating in the play of immeasurable and transcendent energies. Nature cannot transcend itself, but it may be transcended. Though its forces must act and react invariably within its sphere, bound together in the meshes of its material network, other influences may be conceived to pass as ethereal impulses through it, their radiant energies stayed not by its texture; their passing through it swaying it as a breath of air might a web of gossamer, yet breaking not its finest threads. Pervading these meshes of the natural, a presence of the spiritual may be felt. In short, a system closed to the view of those who are within it, may be open if viewed from the outside. It may be penetrable by influences from around and beyond it, which might affect it in ways imperceptible to the senses of one dwelling within it; yet this might so be without violating its own laws. Furthermore, in the motions of the closed system there may be involved influences and attractions of different and transcendent order, of which from the nature of the two systems there can be no sensible proof.[1]

[1] Compare Lotze, *Outlines of Psychology*, sec. 66, p. 58: "A condition *a* of a is for b the compelling occasion upon which this b out of its *own* nature produces a new state *b* for b, which in general with the condition *a* of a

Spinoza anticipated the modern scientific fallacy of the closed system when he used this apt illustration of it: "If we assume a little worm to live in the blood, and capable of discerning the several particles of the blood lymph, and the reactions of each particle under the impact of the others, such a worm would live in the blood, as we live in this part of the universe, and could not know that certain motions and changes in the blood spring really from causes external to it. . . . Yet the nature of the universe is not limited, as is that of the blood, but is absolutely infinite, and hence its parts are affected in infinite ways. And as one substance each part of the universe has a still closer unity with its totality." [1]

To this should be added the reflection that the action upon each other of two forms of energy so incomparable as molecular and psychical, does not present a difficulty peculiar to this particular relation of body and mind. It is the difficulty of our understanding how motion of any kind is transferred from one body to another—a conceptual difficulty of physics as well as psychology. Lotze, with his keen philosophic eye, discerned this impossibility of definitely imaging how two mechanical forces can act on each other. We see the interconnection of the parts of a machine, and suppose we understand the transmission of force. But, as Lotze says, "With a little reflection we shall find, nevertheless, that we do not understand both of the conditions on which all machine-working rests—the cohesion of the fixed parts and the impartation

needs to have no resemblance. We have, therefore, no justification at all in putting up conditions which must be fulfilled, if in general an a is to act on a b. The likeness or resemblance of both gives to the possibility of their action no greater, their unlikeness, indeed their total incompatibility, no less conceivability or probability." This idea of Lotze may possibly help to indicate the way in which enzymes or catalyzers may act. Their presence may be a condition *a* of a by which b is affected. In other words, can energy be affected or set free by the mere presence of conditions which are themselves passive so far as what is affected by them is concerned?

[1] *Ep.*, XV, pp. 319–311. Cited by von Hügel, *Eternal Life*, p. 128.

of motion. Many words, indeed, one can make about it; but nevertheless one does not know at last how one part of a fixed body holds its neighbor fast to itself; or how it comes about that a motion, in which it is itself held, ceases, and is caused to arise in another part. . . . What, then, we really observe in these cases is simply the *outward scenery* in which one series of movements runs out, every one of which is connected with its successor in an entirely invisible and incomprehensible way."[1] The incomprehensibleness of any direct interaction between mind and matter is not, then, an altogether exceptionable case; it is an inability of thought which arises from a general limitation of our power of conceptual understanding; it is not an obstacle located solely in the way of a special interaction between body and mind. It is one instance among others of our inability to apprehend how things are done, which, nevertheless, we perceive do occur constantly in nature.

We may grant, then, that the common-sense view of the interdependence and interaction of our physical and mental conditions involves no miracle; this may well be in accordance with the nature of both matter and spirit, which may admit of "*sympathetic rapport*," or effective adaptations to each other that we cannot clearly apprehend, but which we recognize as actual in experience.

The literature of this subject is very extensive. For an elaborate discussion of parallelism from the philosophical side, see Ludwig Büsse, *Geist und Körper*. He maintains that the view of interaction is most free from objections and to be preferred to that of parallelism. He urges, for example, that the consciousness of the relation of two objects *a* and *b* in space can have no physical correlate. The perception of them in their relation is not an act first of being conscious of *a*, and then of *b;* but at the same time they are perceived in their relation.

[1] *Ibid.*, p. 58.

The relating act in this perception is a psychical fact; by what physical act can it be represented or correlated? Physically only the two objects *a* and *b* are given; psychologically a relation between them is presented in the act of perceiving them. There is no physiological analogy to the unifying in consciousness of that which in space is manifold. There persists, therefore, a psychological remainder for which there is no physical correlate to be found left. This remainder is important enough to cause the whole psycho-physical parallelism to totter (pp. 224–228). He argues against parallelism through a detailed discussion of the several philosophical views of it which have been held and the objections that have been raised against interaction. He urges also that biologically the struggle for existence loses all significance if the psychical is not recognized as a coworking and impelling factor (pp. 241–246). Compare Münsterberg, *Grundzüge der Psych., passim.* For a philosophical argument for parallelism, see Professor C. A. Strong's volume, *Why the Mind Has a Body.* His view leads to a psychical monism, consciousness being the real factor, of which the brain process is the symbol—the phenomenal. This is like the doctrine of Clifford (see his essay, "The Nature of Things in Themselves," *Lectures and Essays*, vol. III, and his theory of "mind-stuff"). A thorough discussion of this subject has recently appeared in McDougall's *Animism;* he maintains the view of interaction.

The view of thoroughgoing metaphysical idealism is presented in B. Bosanquet's *The Principle of Individuality and Value.* He holds that in the philosophy of the Absolute every part and function exists in the unity of the whole—the Absolute. The dualism of experience between mind and body is thus by the theory cut at the root. "Mind, so far as it can be in space, is nervous system. . . . You cannot say that the one acts and not the other. There is nothing—no part nor point—in the one that is not in the other. . . . Mind is the meaning of externality." We do not have in mind "mass plus direction," the notion of "matter plus miracle"; the guidance is not from without, but the mind is inclusive of the body, itself a larger whole within the Absolute. "The apparent dualism between matter and consciousness is an arrangement which falls within

consciousness"; etc. (pp. 205–220.) Thus pure idealism, with its metaphysics of the Absolute, has this advantage—in the idea of the Absolute all dualistic difficulties can be swallowed at one mental gulp; the Absolute Whole is a universal process of digestion; in it all logical heterogeneities, as fast as they appear, are reduced to a common pulp, and the process of internal fermentation (anabolic and catabolic) goes on *ad infinitum*.

In a recent book on the *Philosophy of Religion*, Mr. George Galloway, starting from Lotze's discussion of monads, suggests a modification of that view which, he thinks, renders the theory of interaction more conceivable. He says: "It seems more reasonable to suppose that, though the bare monad is the limit of individuality, it is not the limit of being; that beyond the lowest centres of experience extends a continuous medium out of which they are differentiated and in which they interact." "On the theory here advocated the monads and the medium form a system, neither existing apart from the other, and both involved in the process of experience as its ideal and real sides." He does not, however, follow Lotze in identifying this common medium with the Absolute or Ground of the World. But for full explication of this suggestive treatment, we must refer to the volume itself (see note, pp. 449 *seq.*). His view might find an illustrative verisimilitude in the idea of the ethereal medium of space, and the relations of the material elements to each other in and through their existence in and relation to the ethereal medium.

Immediately, however, another and a more confusing difficulty awaits us when we seek to visualize the nature of the soul which, we assume, exists in connection with the body. To the most sublimated idea of the soul some shadow of earthiness still clings. If we would think of it as a substance we can hardly escape clothing it with some vestige of materiality. Yet how can we think definitely of any object except under the category of substance? We may succeed in abstracting gross materiality from it by fixing our thought intently on the idea of the spiritual; we may leave the idea of the body unnoticed in the mar-

ginal haze of consciousness; nevertheless it is there, never entirely to be got rid of, when we speak about our souls. The idea of some soul-substance is held in a certain material frame or setting, like the rim around one's spectacles, unnoticed while the eye is fixed upon an object in the focus of vision, but of which we may become aware when the attention is relaxed. Kant affirmed that substance is a category or necessary form imposed by the mind upon all objects of thought; and if this is so, one can objectify his own mind in no other way.

This formal necessity of thought, however, does not stand in the way of natural science as it does embarrass a spiritual contemplation of human nature. For scientific inquiries may proceed quite as well by positing an unknown x to represent the substratum of matter, while that x itself may be left as a negligible element to the end of the scientific equations. It is not necessary to apprehend what matter is in order to determine how things work. Relations among things, modes of coworking, sequences of movements, laws of behavior, the constitution of nature—such is the subject-matter with which natural science has immediately to do; while theories as to the ultimate nature of matter, or speculations about its origins or primal forms are of strictly scientific concern so far only as they may lend imaginative aid to experimental researches. The theories of matter may be changed with any advance of positive knowledge, as recently the atomic theory of the structure of matter has been greatly modified since the demonstration of radioactivity. Such words as molecules, atoms, ions, electrons are so many marks which science puts upon things in order to identify the objects of its experimental knowledge; and, as Sir J. J. Thomson has somewhere remarked, a scientific man's creed is his working-theory. Indeed, whatever speculations concerning the nature of things are thrown out in the progress of science might not inaptly

be called the by-products of natural science. Since a scientific man need not trouble himself about the value of the x of his equations, he can neglect entirely the idea of substance, although the shadow of it is as present in his thinking in his laboratory as it is in the study of the metaphysician. For the idea of "mass" is always with him, as Sir J. J. Thomson has said that he cannot entirely get rid of it; but his working-theory need not be burdened with anything weightier than a mathematical symbol of it, and he can go merrily on his scientific way until brought up by the first human question that may meet him.

As natural science has abstracted from matter its perceptual characters—whatever renders it material to our senses; as it has penetrated farther and farther into the invisible realm of nature's working, and has left the "thing in itself" as much in the air as it is in the Kantian metaphysics; so science has tended to become more and more a pure science of energetics. It is ever in pursuit of the modes of energy and its transformations. Atoms were conceived (as by Boscowitch) as points of force, extension being thus abstracted from the idea of the atom; then the point ceases to assert itself as an infinitesimal particle of "stuff," and is content to be regarded as a hypothetical mark for determinate change, a point of departure and return for motions. Identities of things are not, as thus conceived, supposed to be conserved in some substratum or substance in which their properties inhere; they are forms more or less enduring of motions always occurring. In the idea of energy, we are told, we first lay hold of the real, because it is the working. Ostwald assures us: "Matter as a primary idea is for us no more at hand; it arises as a secondary appearance through the constant correlation of certain forms of energy." [1] Energetics, we are told, gives the minimum of

[1] *Natur-Philosophie*, p. 373.

conditions under which measurableness of appearances can be spoken of. Ostwald, however, has wandered further into philosophy than most physicists would be willing to follow him. It is noteworthy that in this evolution of the science of physical nature into a study of energetics the powers of the imagination to visualize the elementary factors with which it deals have been far surpassed. In the successful pursuit of the endeavor to find the rational order and laws of nature's working, the realm of appearances has been left behind. Natural science is itself a sense-transcendent science. And in such natural transcendentalism it is justified by its fruits. To be sure, the discriminating power of the eye has been discovered to extend farther than we had supposed; for Lord Rayleigh informs us that a luminous point or line may be seen although it does not occupy any interval of space; brightness without visible extension may be perceived. "The eye, whether unaided or armed with a telescope, is able to see as points of light stars subtending no visible angle. The visibility of the star is a question of brightness simply, and has nothing to do with resolving power. What has been said about a luminous point applies equally to a luminous line. If bright enough it will be visible, however narrow; but if the real width be much less than the half wave-length, the apparent width will be illusory. The luminous line may be regarded as dividing the otherwise dark fold into two portions; and we see that this separation does not require a luminous interval of finite width, but may occur, however narrow the interval, provided that its intrinsic brightness be proportionately increased." [1] This is as far, perhaps, as science can go in ridding us of the concept of substance in the science of energetics: viz., to regard brightness as a perception given in the eye, yet requiring no point of visibility in space. But even so, the last vestige of sub-

[1] "Theory of Optical Images," *Mic. Journal*, August, 1903, pp. 474–5.

stantiality or magnitude is not lost; for the qualifying proviso of Lord Rayleigh's statement still keeps the discrimination of brightness from darkness under the category of quantity—it must "be bright enough"; its intrinsic brightness must be increased in proportion as it loses spatial position; the eye, receiving a sensation of brightness, though from no fixed point or line that is bright, receives more or less stimulation from vibrations occurring in space. Such is the puzzle of mind and matter to which we come at the end of the subtlest analysis of our optical consciousness.

We have been dwelling thus upon the tendency of modern science to leave to one side as a negligible matter the idea of substance, and to think scientifically in terms of energy, because we shall follow very much the same method in considering further the rôle which the ever-present yet always vanishing idea of substantiality has to play in our conception of the soul. We shall carry over into the interpretation of spiritual being and life the analogy which may be drawn from the science of energetics in the interpretation of the physical world.

The idea of an individual, indestructible soul-substance has been held as a basis of faith in its persistence after death. But it has perplexed as much as it has aided religious philosophy. Usually the idea of the soul is associated half consciously with some vague visual image appearing and vanishing from mind, like an indefinite white cloud. One person, on being asked what was in mind when the word soul was made the object of thought, replied "a certain circle of soft, white matter." It is in pictures and symbols that we think of things spiritual, and the shadow of this earthliness lies over our thoughts of the heavenly.

In religious teaching the soul has been represented in varying degrees of substantiality, ranging from gross materialistic conceptions of it to the utmost refinement of

spiritual thought of its nature. Thus among the early Christian fathers Tertullian maintained that nothing is unless it be body. The soul has the same form as the body, and it is delicate, luminous, aeriform in substance (*De Anima*, 6 *seq.*). Augustine shook his thought free from such materialism, and held that the soul is immaterial. There are to be found in it only functions, such as thought, knowledge, willing, and remembrance, but nothing which is material. It can feel each affection of the body at the point where it takes place, without being compelled first to move itself to that place; it is, therefore, wholly present both in the entire body and in each part of it. Yet he regarded this unextended, immaterial principle as a substance, or subject, and not itself a mere attribute of the body.[1] To Thomas Aquinas the rational soul is the form-producing principle of the body. Descartes set the problem of the relation of mind and body directly before modern philosophy, when he put the one over against the other in a dualism which it requires divine assistance to overcome. The soul is thinking substance, and material things extended substances. By substance Descartes understands "that which so exists that it needs nothing else in order to its existence." The soul, being an unextended substance, can be in contact with the body only at one point, which Descartes would locate in the pineal gland, because that is an organ of the brain which is single, and not double like other organs of the brain. Upon this doctrine Leibnitz founded his theory of the soul as a monad, existing in a pre-established harmony with other monads. Monad is Leibnitz's name for the idea of a simple, unextended substance, an ultimate unit of being which has the power of motion, comparable to the force of a trained bow. The soul is to be regarded as the governing monad, or the substantial centre of the body, so far as the latter has

[1] Ueberweg, *History of Philosophy*, vol. I, p. 342.

been accommodated to it, or brought into harmony of action with it. To Kant the soul is an immaterial substance, but it is transcendental, and as a "thing in itself" is unknowable. A return toward a more materialized conception was taken by Ulrici is his endeavor to visualize the idea of the soul as a kind of fluid substance, non-atomic, undivided, continuous like the ether, extending from a given centre, and permeating the whole atomic structure of the body, yet limited by the forces without itself.[1] Fechter's definition of the soul is suggestive: "By soul I understand the unitary being that appears to no one but itself. . . . I understand by spirit and soul the same being, which, as opposed to the body, appears to itself. . ."[2] Mach gives this distinction between the physical and the psychical. "The totality of whatever can be perceived in space by every one alike is physical in its nature. On the other hand, whatever is immediately given to only one, but is inaccessible to all others, should be known as a psychical process."[3]

Thus throughout the history of philosophic thought the category of substance has cast a semblance of materiality over belief in the soul; and because of the failure of imagination to visualize the idea of an immaterial substance, thoughtful minds have been led to doubt the reality of their spiritual being, and to become sceptics toward themselves.

An instructive resemblance is thus to be traced between the rôle played by the idea of substance in the natural sciences and the place which it has held in the history of philosophy. In both alike it has been an ever-returning interrogation. In both inquiry has been brought to a full stop in the effort of thought to lay hold of the "thing in itself"—just as one is about to throw his defini-

[1] *Gott und die Natur*, pp. 311 *seq.*
[2] *Ueber die Seelesfrage*, Leipsic, 1861, pp. 9 *seq.*
[3] *Knowledge and Energy*, p. 6.

tion over it and catch it, it flits from the logical net, the entity vanishes into vacancy. In both alike, in the laboratory as well as in the hall of philosophy, some vague image of substantiality haunts the speculative mind—the etherealized idea of non-atomic matter in the one case, and the materialized idea of the soul in the other. The idealist and the positivist alike are held in subjection to this necessary form, as Kant would say, of thought. Moreover, in both fields the process of research has been carried to the last possible abstraction of the appearances given by the senses. The phenomenal has been distinguished from the real; the potential has been differentiated from the actual; the secondary properties have been set by themselves apart from the primary; the primary have been dissected from the substance in which they inhere. The worlds have been resolved into whirls of ethereal motion; the very elements have vanished into stresses, strains, lines of force, or whatever may be the corpuscles bearing electric charges of opposite signs. So the endless regress of positive science from the sensible and the imaginable goes on and on. It requires the knowledge of an expert to use intelligibly the prevalent scientific terms; yet the fundamental postulates are found to work in the advancement and verification of a more intimate understanding of nature's operation and laws. By such ideas the practical miracles of applied science have been rendered possible. Somewhat similarly philosophical inquiry has led thought away further and further from the sensible and concrete into the supersensible and abstract; it has put out of date materialistic ideas concerning the substance of the soul, or its mode of continuance after death. Does an arrest of faith in the latter case necessarily follow? Not unless the form of the conception is confused with the reality; not unless at any time the working-theory is identified with the working entity; not unless the limitations of thought under which

science advances are turned into prohibitions by which faith must be ended. Just at this point, where our conceptual power breaks down, where thought fails to grasp the ultimate substantiality of either matter or mind, here the witness of experience to the reality of both remains uncontradicted, or put beyond the range of possibility, by anything that up to this point is known. Just here, at the end of scientific definition or of idealistic abstraction, the evidence of the personal life to itself and its own actuality as a living part of the whole is positive, clear, and final. As in the early naïve consciousness of living, so in the mature thoughtful knowledge of self, these two great verities abide—"I am" and "the world around me is." And as the physicist in the laboratory need take no thought of the ultimate constitution of matter, so the psychologist need not trouble himself overmuch concerning the ultimate nature of spiritual being, in the power of which he lives and thinks. He would learn according to a scientific method what he is, as he discovers what the spirit of a man that is in him can do. Further, in this first faith and ultimate postulate of his personal nature, he may proceed to determine the methods and laws of being which are given in his experiencing himself, as he may the operations of the world external to himself, that are represented through his bodily senses. He, too, may leave to one side, as a negligible category, the idea of a soul-substance, as he lives and trusts in the abiding reality of his personal being. He may locate the conceptual difficulty in the unknown x of his personal problem, as he works out his life in a rational order and meaning; even as the mathematician uses the x as a symbol of the undetermined factor in his equations, and proceeds to find its value in equivalents of the functions or relations of factors given in his problem. Although the physicist through his equations may never arrive at the intrinsic nature of that for which the x

stands, he does discover as the solution of his mathematical logic a world of intelligible operations and indestructible order. It is not needful for us to understand what the nature of ethereal matter is in order that we may learn that radioactivity exists, or that we have our physical being in the midst of invisible radiances from outlying space. Similarly, the operation of things that are spiritual is verified in the world of moral order.

We have thus been comparing the positiveness of physical science, notwithstanding the ultimate indeterminateness of matter, with the positiveness of mental science, notwithstanding the indeterminateness of its ultimate conception of spirit. An even more suggestive resemblance may be observed in the progress of biological knowledge. It has not by any means discovered the final secret of living matter, but nevertheless it has gained much information concerning the nature and energies of the organic world. A great advance was made when the unit of all living bodies was found to be the living cell. Subsequently it was perceived that the cell itself is not a simple, but highly complex, affair, not the source of life, but a pool, as it were, farther down the flowing stream of life. The cell is not the structural unit of the organic world; it is in itself an intricate system. Under microscopic scrutiny distinct centres and differentiations of protoplasm were observed within its little, ever-changing world. Its functions and sequences to some degree have been determined. Ultramicroscopic power has detected, as points of brightness, particles too infinitesimal to subtend differences of position in space large enough to render them visible as distinct magnitudes; and thought, passing far beyond observation, attributes to the living cell determinants of heredity and constructive forces hidden in the germ-plasm, from which the whole world of life and beauty which our eyes behold has come forth. But the reality of these germinal powers, and the ever

fresh and fruitful actuality of this world of life and joy, are not to be questioned because at the end of our utmost research there remains the biological *x*, and speculative thought must be contented to pause with a symbol of something as yet undetermined. Nevertheless, biology is not tempted to cast away its positive knowledge of life because it finds the secret of it ever just beyond its reach; the regress into the unknown or inconceivable does not render all we know uncertain and empty of reality. That which is becoming known may cast light a little further into the vaster unknown; but the unknown throws no shadow backward into the light from the known. Similarly, psychology resolves the "structure of the mind" into simpler elemental processes of behavior, but reaches no structural forms which may be defined as final and absolute units of mind. But why should the psychologist's inability to apprehend the ultimate essence of mind put upon him the burden of proving that the mind in which he is able to state the question is not itself a phantom? Why, scientifically, may not a man confess that he has no idea of what his soul may be like, without denying his experience of himself as an identical person? Or will it be said that unless we can have some idea of substance we lose all touch with reality, either in ourselves or in the objective world? If so, then not physical knowledge, but personal knowledge, becomes the nearest approach, the last hold upon substance, and hence the more positive knowledge. For it should be remembered that our consciousness of ourselves as acting is the very mould in which all our ideas of the material world are shaped; and if we break that mould, there is no possible form or fashion which we can give to a positive science of things. As we have observed, the first and the last element of all human knowledge is our experience of ourselves as exercising power of will. One can have faith in nothing if he has lost faith in himself. Our belief in the actuality

of the outer world is reflection of our self-knowledge upon its appearance to us. If the light within us is an illusion, all seen in that light is as a dream. "If therefore the light that is in thee be darkness, how great is that darkness."

This does not leave us in mere phenomenalism. Mind as manifesting itself in its distinctive kind of energy in consciousness; matter as appearing in its kind of energy to mind—these are the two ultimates of known being, and the reality of both lies in their power to become manifest. The self-realizing is the self-revealing of personal life. The appearance of the world is announcement to the mind of its actual presence. The decided tendency of modern thought, therefore, is neither toward a mere phenomenalism, nor an empty idealism, but to some form of real idealism. We discover ourselves living as centres and sources of energy in a universe of forces. We find it to be an ordered system of energies. Such order and system are evidence alike of permanent form and ceaseless transformation; and that evinces some constant reality. Nature has intelligible coherence; there is logic in its order. In this sense Hegel's maxim has truth: "The real is the rational, and the rational is the real." The natural sciences indicate this philosophic trend toward some kind of real idealism. (See Chap. XI.)

We have reached thus far these results from the preceding inquiries: that mind and body are set in an order of interacting energies; and the energies, of which in the act of living we become aware, are referred in consciousness to a common centre and source which we accept as the self. Consciousness with us is become self-consciousness. The personal may so far be described as the constant of consciousness; personality equals the constant of energy, potential and kinetic, of the individual consciousness. Scepticism within the limits of our self-knowledge is not called for by our ignorance of the uni-

verse. We are real and rational to ourselves; and hence we may look for the real and the rational beyond ourselves. Not troubling ourselves, therefore, overmuch concerning the intrinsic and ultimate substantiality of the soul (the metaphysics, or what might be called the meta-conception of it), possessing ourselves in the fulness of personal powers, we shall go on in the following chapters seeking and finding still further signs to lead us into the meaning and hope of personal being and life.

It is not necessary to think of a being as existing in space, that is, as having extended or material substantiality, in order to think of it as persistent, that is, as being identical throughout its temporal existence. It may be conceived as permanent in time as an identical flow of energies, without regard to its existence in space. Then a temporally identical series might again be thought of as related to existences other than itself in space, and, so perceiving itself in relation to them, as also related to space. In other words, a finite progression conceived as ever flowing on, changing in its temporal successions, yet ever identical with itself, would be for its period of existence a permanent entity.

McDougall (*Body and Mind*, p. 162) argues that it is impossible to banish the idea of substance from psychology. Conceptually this is true. But may we not say that the conscious subject is aware of its substantiality, *i. e.*, of its permanent individual existence as distinct from objective, or of its phenomenal being, although we may not be able to form a conception of what it is that gives to it its consciousness of self-substantial identity? May we not have a *perceptive feeling* of the substantiality of being although the nature of substance lies beyond apperception? The flow of conscious energy may be conceived to become aware of its flowing as the same stream throughout; as potential it is always itself, and not another. If it be asked, What, then, holds the conscious stream together as the same stream? it might be answered: It is by its own motion that it maintains its continuity; somewhat as a gyroscope is held up by its own circling; or, better, as a vortex ring of the

ether is supposed to maintain a very solid and persistent identity as a form of motion. This verisimilitude, however, goes no further than its relation to the difficulty of supposing identity of existence that is not thought of as a substance. The identity lies in the continuity of a process.

Our self-consciousness is limited both by inward and outward forces—inwardly because it is a self-centring circling of energies; outwardly because held within its own sphere by the forces of the universe in which it has its being. In short, we know ourselves really, though not categorically; in essential self-identity, though not in material substance. Inconceivableness as to how we are what we are, is not contradiction of our primal knowledge that we are. It may be only a limitation of our present partial development; we have not as yet fully come to ourselves as personal beings.

It is another question whether some embodiment, or material substantiality, is a necessary condition or means of acquisition or retention of the sense of personal identity: whether some embodiment is necessary for its maintenance after death. To this we shall return later on.

CHAPTER V

DEVELOPMENT OF PERSONALITY

THUS far we have been seeking for the meaning of personal life as it may be discerned in our thoughtful experience of it. But our personal consciousness was not given to us as something ready-made at birth to be possessed and converted at once to use, as some awareness of life may be given to the animal world. We have a vast deal to do in making ourselves and teaching ourselves after we have received at birth our individual share of a human inheritance. Our inquiry would not be complete without critical consideration of the development of the individual person.

Of the earliest period of infancy our memories retain no traces; yet in the first two or three years of life the structural lines are laid down, and the individual tendencies of the subsequent development of character are largely determined. In these unremembered years of infancy nature finishes in the main its work of making us, and we begin to make ourselves. In the early hours of life just before the dawn of clear self-consciousness, the secret of our origin lies unrevealed, and from the infinite mystery and silence out of which our brief day of life arose, no voice is heard, no sign appears to tell us whence we came and whither we go. All the more eagerly, therefore, must we search the natural history of the growth of personality from the earliest moments of distinct self-consciousness for indications, even the slightest, of its meaning and destiny.

The development of conscious personal being from its first observed beginnings has proceeded along two lines,

the physiological and the mental; and along these two interconnecting ways it must consequently be followed in the endeavor to apprehend its meaning.

We inquire first what is now known concerning the growth of the brain, which may throw any light over the relation between body and mind. May we gain from modern physiological psychology any probable information that may help us to understand better what nature has been doing for us in our brains, and what with our minds we have been doing in making ourselves what we are?

When we gather up and review the results, thus far obtained, of experimental psychology, the answer to this inquiry seems disappointing. The laboratory explanation of us goes just far enough to leave us wondering all the more how our brains were organized for us. Here the light fails just where we begin to see. A little more knowledge at this point, or in that direction, might mean so much more. Interesting facts, indeed, are brought out as the results of painstaking investigations; useful acquaintance with some general physiological principles of value in child education has been gained. We owe much to the physiologists for the information which they have to bring to our schools and to the homes of the people concerning physical conditions and laws in relation to mental growth and soundness, and also concerning methods most useful in the nurture and training of defective children. But beyond this service of admitted value for pedagogical ends, these investigations only lead us back to the questions with which we started, and sooner or later leave us before the same limits of knowledge in our search for the ultimate meaning of embodied mind. They may, however, enable us to understand more intelligently the nature and significance of our self-knowledge, though they open no way over and beyond these limits. We naturally look first for such enlightenment to

whatever physiology has to show us concerning the changes that occur in the nervous system coincident with the growth of intelligence. If, as many believe, the physical and psychical processes run parallel to each other and every change in one has its concomitant in some change in the other, then it might be presumed that some modification in the cerebral cells or their connections would be discovered to occur coinciding with each successive change in the growth of the mind. And if in any cortical areas such corresponding modifications could be demonstrated, we might have some basis in fact upon which to construct some plausible theory of their interrelation. On the one hand we have considerable quite definite knowledge of the successive stages of mental development; we may follow from step to step the sequences through which in childhood the mind grows in knowledge, and is in time brought to mature intellectual efficiency. We may observe this process of mental growth in others, and from comparative studies deduce certain average rates and laws of mental advancement and training; and one looking backward over his own life can render a fairly intelligible account of his education. Now, if we could watch the physiological side of this development and match it, period by period and fact by fact, with the known psychical side of it, many vexed questions of our theories of knowledge might be cleared up. As the result of much ingenious experimentation and laborious research, what contribution of this nature has observational psychology as yet to report?

In the concluding chapter of his careful volume on *The Growth of the Brain*, Mr. H. H. Donaldson sums up the results of recent investigations as follows: "Connections between the exercises of formal education and brain change have not been demonstrated. It is not known how a year's schooling affects the central system, and it is not probable that we shall soon arrive at facts of this sort.

Available, however, are the facts of anatomical growth during this period, and to these plausible explanations have been given. The aim at the moment, therefore, is to determine what limitations anatomy places to the educational process, and thus to obtain a rational basis from which to attack many of the educational problems" (p. 342).

The facts, if any of such significance are to be discovered, will appear as we seek for information in answer to the following questions: (1) What, if any, excess of mind-growth accompanies, or remains as a residual of experience beyond the known facts of brain-growth? (2) Do any stimuli of mental initiative appear as factors of brain-growth and adaptations? (3) From the reversal of the process of development in senility can anything be learned concerning the parallelism or divergence of mental and bodily sequences?

As viewed from the anatomy of the brain, the cerebrum seems to be completed at birth so far as the number of its cells is concerned. But the full size and weight of the brain is not reached approximately until about the age of seven years. The encephalon at the age of three has attained more than two-thirds of its adult weight. At about that time formal education, or schooling, is usually begun. The earlier period, accordingly, has been designated as the period of natural nurture. Hence any facts bearing on the coincidence or divergence of the two kinds of growth, physical and mental, during this formative stage will have much interpretative value. It is known that during this earlier period the principal brain-growth consists in the development of cells which were latent at birth, and in the rapid increase of connections and the establishment of paths of communication between the central areas and throughout the sensori-motor system. Thus the work of integrating the nervous organization seems to be the first task which nature gives to the grow-

ing child. The elements to be organized, and the main lines of their co-ordination, are already determined at birth.[1]

It is known that immediately after birth a general diffused state of organic sensibility exists. That may be regarded as a preliminary condition corresponding to a first stage of mental development. The specific sensations follow as the cerebral centres are cleared up and more thoroughly organized—taste, smell, hearing, and sight in their order. From time to time emotions appear, such as fear, anger, surprise, and so on; and these are associated with certain physical equivalents, although the psy-

[1] In the human fœtus the development of the cerebral cortex has been quite accurately determined. In the twenty-fourth week "small granule-like cells, arranged in vertical rows, and closely packed together, form the bulk of this layer. In the twenty-eighth week it has increased in thickness, the cells have become somewhat stratified, and in the lower portion of the layer have begun to show the full characters of nerve-cells—a nucleus, nucleolus, and well-marked cytoplasm. A month later cells have begun to develop through the entire thickness of the cortex, the clearly marked cells have become larger, and the elements have further separated. . . . At birth the thickness is much increased, more cells are developed, and those previously enlarged have increased in size."—(*The Growth of the Brain*, H. H. Donaldson, pp. 237–8.) For a considerable period the natural nurture of the brain of the child seems to be devoted to the acquisition of the power of organic control of the parts, and the co-ordination of the members of the body for more conscious ends. But besides these physical characters of cell-growth and nervous connections, and the apparent adaptations of the sensori-motor mechanisms for vital responses to an outward environment, physiology cannot apprehend, and has no means of determining, what successive modifications and transformations of chemical elements, or what physical stresses and motions may accompany, step by step, the rapid gain of mental capacities and the marvellous extension of the mental functions during the first two or three years of the growth of the little child. This is the period in which advancement in both ways is most rapid and most obvious; but just in this period of rapid development, to which Bergson's phrase, "creative evolution," may be most characteristically applied, we cannot tell just how what goes on in the mind and what occurs in the body are related or timed to one another. Which is first, and which secondary, or what simultaneities there may be, can only be conjectured. No magnifying-glass can bring out the lines of interconnection. Can anatomy or physiological chemistry afford any clew to what during this period has been called "the education of the nervous system"?

chological experts are not entirely agreed as to which at first are antecedents or consequents, the emotions or their bodily expressions. There begins to be manifested a germinal self-consciousness; there are increasing indications of a forming individuality. Before the child learns the use of the personal pronouns it shows unmistakable signs of its individual assertiveness. It begins to show a will of its own. In the germ of this self-will lies hidden the secret of personal being; and from its earliest foreshadowing to the highest intellectual power it remains the spiritual mystery of the personal life.

Of these beginnings of growth in body and mind it can be affirmed only generally that they obviously condition each other; but little is definitely disclosed as to the method or the coincidence in time or quantity of their common functioning and growth. If we pursue the inquiry from the first period of childhood step by step to maturity, similar interrogations, one after another, will arise and be left very much in the air by any known facts. Thus, after the power of transforming sensations into perceptions of outward things has somehow come to be exercised by the child, after it has opened its eyes and looked around for some time on the world about it to be discovered, it gains the added faculty of keeping some perceptions in mind long enough at least to see them mentally in relation to other perceptions; the mystery of memory already begins to work within the child-mind. It can recognize its mother or its nurse, and ere long know some things as different from others. Physiological changes in cells and connections, as we have observed, appear in this formative time, and the one process evidently conditions in some way the other. Amid these associated growths of cells and these incipient ideas, one distinctive mental character becomes clear: the child not only hears and sees things *in relation* to its vital needs, as when it cries and ceases to cry when what it wants is given to it, but,

over and above that, it acquires after a while the power of perceiving that the things which it sees *are* so, and of knowing that one is not as another; things begin ere long to assume to the child permanent characters, and it knows them by those permanent forms as different from each other. When he begins to talk the child learns nouns first; so animal intelligence might possibly come to associate sounds with things seen. But the next step takes the child a long way beyond that; for he learns to use verbs connecting things. He is consciously relating, comparing, affirming something of the contents of his little growing consciousness when he uses verbs, when he thus says something about things. What cell transformation answers to the mental formation of a verb? What possible physiological moment of cell-growth may be surmised as coincident with this noteworthy step forward in mind-growth? Admit that psychologically this advance may come so gradually, so imperceptibly, that we, watching the progress of the child's consciousness, can hardly note when it first shows that it has achieved this victory of mind over matter; nevertheless, it is a mental acquisition which differentiates itself, as soon as it appears, from any continuous transformation of the cortical elements. Mutual co-ordination and conditioning is the general fact of the existence of body and mind; a parallelism exactly coincident either in growth or functioning is pure assumption; an equal rate of growth of brain-cells and corresponding conceptions is not measurably to be determined during the earlier period of the development of individual personality. Clearly the noun-period and the verb-period mark two stages of the child's mental growth. No such marked physiological stages are to be observed.

Do any exact coincident changes appear in later periods of bodily and mental development? Are these interrogation-points, which one must leave after all that is known of child development, points that may be removed, or

are they repeated and emphasized after what appears in later and mature self-conscious energizing? We shall summarize the main facts which have been determined concerning the growth of the brain, so far as they may throw light upon our immediate inquiry.

At the age of seven the brain has attained approximately its full weight, the subsequent increase being comparatively small. No quantitative addition of brain matter is found to correspond to the qualitative increase of mental activity. But if thought be regarded mechanically merely as a cerebral by-product, how, then, has the output of thought been progressively enlarged for many years of mature life, while the cerebral mechanism is not increased in size? A possible explanation is at once suggested by the finer and more complex organization of the brain, which goes on for some years to come. At birth the central nervous system as well as the peripheral is to a large extent unmedullated—the white medullated sheath, that is, in which the cylinder axis of a nerve is enclosed being a later development. With the acquisition of myelin the nerves become capable of their full specific functioning. Throughout the period of mental growth into middle life the multiplication and finer interlacing of the connections between nerve-cells may continue; thus the brain, while not materially increasing in size or weight, becomes more highly organized and more responsive to the ever varying demands of life. In short, the brain gains larger capacity through better organization.[1]

Moreover, it has become possible experimentally to locate distinct centres or areas in the cortex of the brain, differentiated by some apparently specific marks, with

[1] The increase in the different layers of the cortex and the connecting fibres has been tabulated for different ages by several physiologists. See tables in Donaldson, *op. cit.;* Howell, *Textbook of Physiology*, and other text-books. The statements above need not be encumbered with details.

which several distinct mental processes may be associated. "Differences in the shape of the cells, the thickness and number of the strata, the caliber of the fibres, etc.," are said to "be constant for any given region." "Campbell, in a very thorough investigation of this kind, has succeeded in separating some fifteen or sixteen areas."[1] Another physiologist, Flechsig, distinguishes a body-sense area as having a different structure from a motor area, and also a visual sensory from a visuo-psychic area. In the anterior "association areas," which lie in close connection with the body-sense area, and which consequently may be intimately associated with the organization of experiences based upon internal sensations, he finds "the possible base in the brain from which may arise the conception of individuality—the self as distinguished from the external world." This, no doubt, might afford an easier seat for the soul than the pineal gland! The suggestion is at least interesting as showing how closely a scientific investigator may presume it to be possible to trace the connection between the brain and the mind. But at the nearest point of contact, where science must give up the trail, the hopelessness of the pursuit of the soul in the direction of the material becomes most evident. When we seem to come closest to it, we find ourselves further than ever from it. No anatomist's hand may open, no microscope can disclose any last retreat and secret abiding-place of the mind in the body. It is significant, although some scientific investigators overlook this aspect of their experimental results, that in Flechsig's conclusions the notion of mental action as an accompaniment or parallel action of the brain has unconsciously perhaps disappeared; and his statement implies some kind of interaction between the areas which he has distinguished and the "conception of individuality." Antecedent brain conditions, and combinations of several such precedent conditions,

[1] Howell, *Textbook of Physiology*, 6th ed., p. 229.

have something to do with the appearance of certain consequent mental processes; unless the latter are supposed to appear from some other causation or fortuitously. Otherwise in this hypothetical brain-system the sudden appearance of a self-conscious thought might seem as supercerebral as the appearance of an angelic messenger in the sky might seem supernatural.

Physiology thus would lead us to the very spot where self-consciousness can enter and take possession of the whole body. A long preparatory fuse, a final point of contact, and with a flash self-consciousness is touched off. We quarrel not with the hypothesis; but it would be interesting if we could learn just where and when and how, by what line of physical transmission of primal energy of nature from afar, the potential intelligence is released, the individual mind is set off, and we are awakened into self-consciousness. Somewhere in the course of the physiological development, when all things are ready, the great change occurs; some time, somehow, we have our hour and the moment of our personal birth; but nature has hidden this secret very deep in the mystery of all origins; and it will lie no nearer our apprehension if we shall have succeeded in pursuing it into a brain area than it does when we observe the first gleam of responsive intelligence in the face of a little child. But let us follow further the lines of growth, both cerebral and mental, subsequent to childhood through the educative period of life.

Training with the animal may begin at once, and it ends as soon as certain animal habits are fixed. The animal is early trained, and then little if anything beyond the range of its developed instinctive habits can be done for it. The education of the child likewise begins, but it does not end with the training of its instincts and the forming of automatic habits. Its training soon becomes also purposive self-education, guided by intelligent direc-

tion of others. Human education may be a lifelong education, and there are in it these two curves to be plotted, the physical and the psychical. Our immediate inquiry relates to their points of coincidence and the comparative length of these two educational curves—are they developed at the same ratio in time, and are they equal in length?

We have just observed that no close identity of ratio or exact coincidence of the two curves can be demonstrated in the earlier period of childhood, when both are developed most rapidly and obviously; we perceive still less appearance of determinate correspondence of growth in the course of subsequent education. On the contrary, at such observational points where we may possibly compare them, we note all the way through life relations of antecedent and consequent rather than of coincident growths. Nutrition may now advance the line of physical growth, and the mental education be slow; again, the mind may seem to grow too fast for the body, and a wise parent resorts to various means to retard it. The one always is in touch, so to speak, with the other; but now one, and now the other leads. And if we represent the two growths by curves, in the period of maturity, toward middle life, the physiological curve is not to any extent prolonged; it comes in time to a full period. This is matter, indeed, of common observation and experience; but scientific research does not contradict it. Compare the relation between these two curves at certain critical points of education; at the point, for instance, where a logical use of words has been gained. In the initial use of a sound as an expression of some organic state or feeling it may be well-nigh impossible to distinguish any reflective intelligence; animals use sounds up to a certain point of expression of animal needs. But from the time when nouns and verbs have once been put together on the lips of a child, the acquisition of language begins as

an expression of mental judgments. Undoubtedly brain and lips, body and mind move together and work together in learning the language which becomes the means of thought; but then the mental curve runs beyond the other; it continues in a marvellous extension of the uses of words, and the conveyance of new meanings through new combinations of words once physically mastered. The words themselves are directly associated with sensations; they are cast in physiological moulds. But language in man's use of it breaks its shell, and on its wings imagination ascends into the highest heavens. Words, themselves coined in the physiological mint, and bearing the marks of their sensuous origin, become the symbols and attain values in exchange for the most abstruse reasonings and the communications of mind with mind in the pursuit of the ideals of the spirit. The brain at about the age of forty or fifty has reached its full growth and refinement; but the mental use of it has not half finished its work. The mental side of the curve continues, though the physical ends.

Compare in mature life, at successive points of education and mental achievement, what the brain may be supposed to do, and what a man in the fulness of his personal power will do. This is the outstanding fact; on the brain side the advancement, so long as there is any to be observed, appears in the perfecting of the adjustments of an existing mechanism, the tuning up, as it were, of its keys, in obtaining the utmost speed and accuracy from it; on the other, the mental, side the range of activities and the number of combinations of the elements of experience, the working them up, as it were, into endless varieties of mental patterns and colors, are indefinitely enhanced. In response to stimulations the pulsations of the heart may be quickened; the blood may revivify the nerves; the cerebral cells may be stimulated to utmost functioning; yet all this physiological excitation will be

held within the well-worn ways of neural communication, and the fixed metes and bounds of the cerebral cells which are no more in number and no larger than they were in earlier years. Up to a certain time of life the cells become more capable of intricate and subtle permutations of their elemental chemistry, although fixed and determinate in their sequences and order; but, when these means are all fully fashioned and made subject to its control, the mind still moves on, and its thoughts become high as the heavens and more than the stars in number. In its unceasing growth and expanding knowledge, perceptions, memories, ideas, judgments, reasonings, ideals, affections, purposes reaching through the years and beyond death become its ripeness and richness of experience and evince its unfailing power of creative life; the world in which the thoughts of man's heart dwell becomes the ever-present yet transcendent reality, in comparison with which earthly things may seem but as passing shadows. This vast excess of mental growth, this superabundance of spiritual life, is evidence of an inexhaustible and inextinguishable meaning of the mature personal life. In this lifelong education and increase the mental overlaps the physical, the spiritual outruns the natural; the flood of memories were enough to overflow the brain-cells, and the sensori-motive or association centres would seem overtaxed beyond computation to contain and order the ever-changing play and ceaseless succession of the thoughts and intents of the mind and heart.

It may be replied that there are an indefinite number of cells, developed and undeveloped, in the ripe brain, and when we consider that these are composed of particles of ultramicroscopic refinement, these cells may be capable of permutations which reach into the mathematical infinite. Would not these permutations, then, be conceivably equal to an indefinite number of mental changes? But the point just now made is not that the brain sub-

stance may not be capable of indefinitely responsive vibration to the uses of the mind; it is the fact that the process of brain organization has not proceeded in any measurable ratio or continuous parallelism with the increase of mental capacity and range of activity, and that the divergence becomes more apparent the longer man continues to grow in wisdom and knowledge; and also, if we seek to compare the two processes of growth at any one point, with regard to increase in any particular mental power, there is no such mensuration possible. Furthermore, an attempt to express one in terms of the growth of the other involves us in unthinkable propositions. Even if we take pains to avoid the crude expressions in which some recent psychologists with biological inexactness speak of memories as stored, or imprinted on the cell substance, and if we try to conceive of the total functioning of the cells as dynamically as we may; even so, the supposition that the brain is mechanically adequate to the task thus hypothetically imputed to it offers much resistance to our power of scientific imagination. Bergson's criticism has force, when he lays emphasis upon the amazing consequences of supposing that auditory images are formed and stored in the brain. In that case there would be thousands of images for each single word, as there are numberless times and inflections in which it may be heard; or if we seek to simplify the matter by supposing an auditory diagram of a word consisting of certain intercerebral arrangements, how, he urges, could there be a common measure between that and the sounds falling upon the ear in never-identical cadences and differences of voice. "How could there be a common measure, how could there be a point of contact, between the dry, inert, isolated image and the living reality of the word organized with the rest of the phrase?"[1] But this is

[1] *Matter and Memory*, p. 148. So also Wundt, *Human and Animal Psychology*, pp. 448 *seq.*

only one of the countless mental images which are to find lodgment, and somehow to be stored away in the hiding-places of the cerebral cells; an indefinite multitude of impressions are presented in each sound of the ear, in every glance of the eye; and these are ever repeated and modified in the thoughts that flit like passing shadows across the field of consciousness. Even an indefinite number of the microscopic cell particles would seem to be swamped by the overplus of the immeasurable multitude of the thoughts of the mind. Thus we seem brought back once more to the ground of common sense, and led to assume our first impression of action and interaction of our bodies and our minds.

Is it said that this naïve common-sense conclusion involves impossible action of matter and mind? But the life that grows and comes to self-realization in this two-fold relation and responsiveness itself denies by its very existence any philosophic denial of its actuality. This difficulty we have already shown to arise from the fallacy of the closed system (p. 122). Our little-known circle of nature in relation to nature as a whole may be like a single cell in responsive relation to its environment; and the intermolecular motions and the laws of its contents may be subject to influences from far and near.

If we avoid the fallacy of the closed system in our search for the meanings of things, we shall escape also the mistake of confusing scientific or logical contradiction with impossibility merely in our conceptions of things. The former may be ultimate and absolute; the latter is relative and variable. The one is a rational impossibility; the other is an imaginative difficulty. To say in the one case it is impossible, is to affirm that under the given conditions, within the known relations, such and such consequences must follow, and no others are admissible. To say in the second case that it is impossible, is only to declare ourselves incapable of understanding how certain

facts or supposed relations can exist. To assert the scientifically impossible would involve a collision and mutual destruction of known factors. To admit the conceptual impossible may involve only a collision of inadequate ideas about things and not a necessary incompatibility of things themselves. The modern mind, while impatient of speculative ideas, is not inclined to limit the possibilities of nature to present scientific formulations of natural laws. The advances of knowledge beyond all limits hitherto supposed to be impassable, has opened up the whole system of things to possibilities of unseen and immeasurable influences from beyond our utmost outlying knowledge; natural science thus brings aid to spiritual faiths by the very fact that it defines more strictly its own limits while such demarcation of them at the present bounds of ascertained knowledge leaves the possibilities of human life on all sides wide open. All that science has to assert is that if there is a spirit within the universe, and if there is a spiritual presence in the body, it must work naturally in both. An unknown factor in evolution is to be provisionally, at least, admitted, where known factors are not sufficient to account for observed phenomena. An overplus of effects requires an enlargement of causative conditions. Mind is an active principle to be reckoned with where physiological elements cannot be stretched to comprise the work which the human organism does. It is the assertion of the presence in evolution of an elementary factor not to be explained by the evolution itself. We recognize the movement, the *élan*, the spirit of life, ever new and free, within the whole. The thought thrown out in this seeming paradox, "creative evolution," is not a return to the old mechanical argument of a first cause; it penetrates deeper into the nature of causation, and it reaches further in its apprehension of the interrelations of things natural, human, and divine; for it is a conception of the permeability of any one part of the

system to the influence of the system as a whole; of the openness of the lower to the higher, and of the effectual presence of the spiritual within the natural. In other words, it acknowledges the immanence of the transcendent in the material, of mind in man, and of something diviner in man and throughout nature. And the transcendent as naturally immanent is active, directive, and purposive, yet without interference with the laws along which, as lines for its own energy, it moves and works, without breaking the subtlest thread of the network of the material texture of things.

Thus far we have been searching into the relations of mind and body during the period of the growth and maturing of both; but it still remains for us to inquire concerning the later period when the processes of growth are reversed and old age comes on.

Reversibility is a character of physical processes; energy may be transformed backward as well as forward under the control of the experimenter. Now, if mental growth is but a physical process it should naturally exhibit similar reversibility. If it runs in exact parallelism with brain changes, this coincidence should be manifest throughout the whole lifetime, from birth to maturity, and from maturity through the last years of declining life. Run fast or slow, wound up or running down, the two clocks should keep the same beat and mark the same time. Is this even approximately the case? Does the senescence of the brain and that of the mind coincide?

It is matter of common observation that in the period of advancing age, as well as of youthful maturing, body and mind are very intimately related, and neither independent of the other. Weakening of the sensori-motor mechanism may involve some corresponding limitation of mental activity, and the mind in such physical conditions must become more dependent on the perceptions

of other persons. The grasp of mental attention may be relaxed as the cerebral centres lose control of the neural connections of the brain. Some mental activities may be inhibited entirely by breaks in sensory nerves that are in connection with centres of the cortex. And when partially unrestrained by the physical organization the mind may wander as in a dream. When such separation becomes entire the mind loses all power of manifesting the energies which it has evinced during life, and disappears in what other modes or relations of energy no science can discover. But when we observe more critically the general correspondence between bodily decay and mental decadence, we cannot fail to notice also certain degrees of disparity between them, and some indications appear of a relative independence of the activity of the mind which do not coincide exactly with the contemporary conditions of the brain. Here likewise, as we have found it to be the case during the period of growth, the two curves, the physical and the psychical, at many points do not correspond. It is beyond question that the cessation of physical growth does not mark necessarily an end of mental development. The mental powers keep on expanding and become more fruitful often for years after the physical roots of life have begun to decay. In later life the state of the brain is characterized by some shrinkage of the cells, and also by more pigmented cells; the brain is apparently not so capacious or clear; but the mind is enlarged and its ideas may be clarified. A corresponding diminution of the higher kinds of thinking power does not follow the regressive signs in the structure of the cerebrum with even an approximative ratio of decline. It is also noticeable that when the deterioration of the neural and cerebral mechanism has gone so far as to result in dulled sensations and paralyzed motions, even to the last breath of life, the mind may shine out for moments as brightly as ever in flashes of wit, or rise to serene im-

aginations of things unseen and supernal. In many instances the spirit has seemed to flame up anew at the very moment when the body was reduced at last to dust and ashes. This is not what might be expected on the hypothesis of an identity or of parallelism of body and mind; it seems more like a release of spirit from physical limitations, shattering them as it escapes.

There are several other points in which these two curves in the descending period of life cannot be drawn true to each other. This is the case where we might have the least reason to expect it—in the loss of memory. We have observed that in memory, which is directly involved in sense-perception, there is given a direct contact between mind and matter. At this point the lines are connected between the material and the mental world. It is not at all surprising, then, that our memories are so directly dependent upon our physical conditions. We remember at some times more easily than at others. We cannot find the words we want for our thoughts so well when we are very tired. On the other hand, a sense-perception may bring to mind a host of memories. They will come back, swiftly passing multitudes of them, some joyous, bearing banners, others silently, with meanings too deep for words—as when we revisit familiar places, walk the old paths, survey the scenes of our youth, or pause at the gate of the home of our childhood. A single object, one of the many on which the eye may fall—a tree, a well, a bit of garden patch, a familiar window—it is enough to make us children again; we hear once more words spoken in far-off days, we see faces that years before we looked upon, and now can see no more. Thus swiftly, and with wondrous change, we pass from the material into the spirit world; a mere suggestion to the eye, and the mind sees a picture which time cannot destroy.

In a purely physiological theory of memory, how do the

cell-phenomena and these mental facts match? Doubtless many fit; but others do not fall so easily into the physiological scheme. The oscillation of life between dependence and independence of the senses at just this point of memory-contact, is one of the observational evidences of the influence of some disturbing force in the physical sequence. This fluctuating line of memory—one moment quiescent, another vibrating with swiftly passing recollections—indicates the tension of two different kinds of energy, the unstable equilibrium of two forces of being; it evinces at one moment the control of the material over the mental, at another the mastery of the immaterial in our living and intensest personal life. Memory is the quivering line of vital unity of mind and body. A recollection is not a simple thing, either a state of matter in a brain-cell or an image latent in the mind; it is a joint act and a conscious re-living in the present experience of what alike in body and mind has once actually been lived in the past.

The physical element involved in memory, whatever it may be, is a condition, but not the act of remembering. That involves a mental effort; attention is fixed in the direction whence a vanished image may be recalled. The field of consciousness is searched, as one would throw a light here and there in the endeavor to find something lost; and there is an act of recognition when the lost is found. Not only, on the one hand, in the act of recollecting is it true that a sense-impulse, which has been transmitted possibly to the association areas of the brain, may set a whole train of thought in motion; equally, on the other hand, a thought in motion may set a whole area of brain-cells quivering. But their excitement, however occasioned, would not issue in a distinct recollection without some coincident mental act of recognition. Again at this point the relationing action, the comparing energy of the psychical part of us comes into play; without that

no memory proper could ever be formed. A memory thus may be called an act of creative evolution.

It has been said that the phenomena of forgetting are the aspects of memory needing most to be explained. Instincts last as long as life. Animal habits once fixed are permanent. Heredity, reduced to the microscopic determinates of the germ-plasm, resists outward mutation. Nature, outside of mind, does not forget. With us memory is a reversible process. We have power to win memories from life, and likewise to leave them forgotten behind us.

Many interesting, perplexing, and at the same time illuminating facts present themselves in abnormal lapses of memory, such as cases of the loss of memory from cerebral injuries. The pathology of memory has become a special branch of late in experimental psychology. In such instances disturbances and losses of memory have been demonstrably connected with cerebral changes or injuries, as in various forms of aphasia, or when, as a consequence of pathological conditions, the sense of personal continuity has been interrupted for considerable periods of time and again recovered. Hence, it may be asked: How can there be anything but a complete dependence of consciousness upon conditions of the brain when memories may be lost from an injury, or the thread of personal identity be broken by a blow? Such dependence of mind on brain does not by any means prove identity, and critical analysis of the phenomena of forgetfulness, both moral and pathological, forbids us from jumping to any such hasty conclusion. The same facts which show a coincidence of some cerebral changes with memory-changes present, also, on more thorough inquiry some appearances which it is difficult to account for on any theory of the identity of consciousness with cerebral conditions.

Consider closely, for instance, what is lost when a word drops suddenly out of mind. Ordinarily it is not a verb,

or any symbol for an action that is forgotten, but some name of a person or thing. That is apt to disappear just at the moment when it is embarrassing to forget it. We want to use it, and instantly it is gone. What has vanished is not the memory-image itself of the person or thing; we know what we want to recall, but we cannot say it. The memory-image of the object is not lost, but the auditory symbol for it. We may recover the suddenly vanished word by consciously putting out of mind what we wanted it for, clearing the mind for a time of our thought of it; and afterward the name or word desired will pop of itself into our mind, as we say, and the memory which all the while had only disappeared, but had not been lost, will appear unbidden in the focus of consciousness among the associations which naturally go with it. The interpretation of this familiar experience seems to be that in the act of seeking for it the mental attention interfered with the natural process of recollection, by its very tension perhaps inhibiting the neural processes from functioning spontaneously, and preventing the associations organized in memory to come up in their natural connections into consciousness—in looking for one thing we saw things all around it, and so may have overlooked it; very much as sometimes we may fail to see before our eyes an object we are looking all around for. Its memory-group has been in some manner dissociated; afterward, when in a state of mental relaxation, something recalls the memory-group, and the missing name turns up naturally with it. There is, so to speak, a natural memory-pattern, and we have to see things to some extent as wholes if we would bring to mind their particulars. The mind acts selectively in memory. A memory is not a simple matter; it is a physical and psychical complex; what we experience in recollecting one thing after another is not a succession of separate states of mind, like the rapid replacement of one slide after another in a moving

picture; for memory is not a mechanical composite merely. In remembering we pass through an unbroken operation of mental sorting of the contents which are ever changing in our consciousness, and memory proper is the act of selecting what we want for immediate use from the total contents given at any time in consciousness. The physical factors, both sensory and organic, have very much to do with what is in consciousness, as well as with the power of mind to bring things into consciousness; and consequently memory has its limits on the physical side; but the conditions of memory, whether they are physical or also in part psychical conditions, are not the act and process of recollecting.

This view of memory as a personal act, as well as a cerebral condition, is elucidated and confirmed when we examine the cases of aphasia which seem at first to reduce memory to a purely mechanical affair. In such cases (aphasias, amnesias, apraxias, etc.) the patient loses ability to connect the impressions received from one sense with those received from some other sense or to interpret correctly the meanings of objects presented to him in terms of his total sense-perceptions, as in ordinary aphasia he may hear sounds while unable to understand the meaning of them. Similarly, in visual aphasia the patient sees words, but he cannot read them. In other cases the patient may be shown a bell, and he cannot tell what it is; but when it is put in his hand, or rung, he knows at once what it is. Such inability to recognize objects, or, if they are perceived only as they are presented to one sense, failure to co-ordinate them with the other senses in a true recognition, is traced by neurologists up to the cerebral centres; they inform us that on account of injuries or impairments of certain brain areas certain auditory or visual memory-images have been lost or the connection between them broken. Mental lapses are thus associated directly with brain lesions,

and at first glance this knowledge might seem to plunge us at once into the morass of materialism, leaving no footing for any belief in the spirit in nature or in man. If at a single point an *absolute* dependence of mind on matter should be demonstrated, it might possibly be inferred that the further extension of the materialistic explanation over the whole range of intellectual life would be only a question of the advancement of knowledge. Such conclusion, indeed, would not necessarily follow. We might then have to gain a deeper knowledge of matter as well as of the spirit. But if it could be proved that any mental element or factor of memory is annihilated in such disintegrations of visual and auditory and other recognitions of objects of sense-perceptions, it might plausibly be said that the outworks at least of an idealistic philosophy had been carried. What is really lost in these lapses of memory? What does the progress of research into these abnormal phases of personal life bring to light? "It is not the auditory word-images that are gone; it is more probable that the manifestations are due to dissociation from the memories relating to the other senses." . . . "The neurologist may point out the missing psychic elements necessary to the formation of the comprehension of written or printed words, and refer the 'symptoms' to the loss of visual memory word-images; although here again it may be more correct in this case (a patient) to refer it to a lesion, or dissociation, organic or functional, between certain groups of visual memories and those derived from other sources."[1] What is lost is not mental memory-images but the power to connect memory-impressions in a true recognition of objects, as well as in appropriate sensori-motor reaction. The experiments go further and indicate that, although a patient could not correctly recognize and tell the mean-

[1] Boris Sidis, *Psycho-pathological Researches, Studies in Mental Dissociation*, pp. 16–18.

ings of things, nevertheless he had retained a subconscious memory of them, and that indirectly through other paths of association the apparently lost memories might be restored. Thus of one case it is said: "These experiments indicate more or less clearly that experiences are actually present to the patient's consciousness, although the patient herself seems to be unconscious of them. The stimuli impressed on the patient's sense-organs are perceived, co-ordinated, recognized by systems dissociated from the principal functioning constellations constituting for the time present the patient's consciousness. That these dissociated systems are of a conscious nature is clearly seen from the fact that they are able to perceive different stimuli, such, for instance, as touch, pricking, electricity, etc., and furthermore are able to count and give answer to questions" (p. 53). The character of the methods employed in these experiments indicates at the same time that if there be a dissociation of habitual tracts there must be an indirect association by unhabitual tracts; for the answers and the fact that these stimuli were actually perceived could be brought out in an indirect way, the patient giving replies of such a nature as to clearly indicate the presence of these experiences in a subconscious form within her mind. The patient, for instance, is not able to feel touch or pain stimuli, but is able to tell their number. The evidence in detail for these conclusions is extensive; the reader is referred to the volume cited.

What appears, then, to be lost in such lesions is the ability to combine groups of sense-perceptions in their normal nerve co-ordinations and their proper motor-responses. Breaks in the sensori-motor co-ordinations are made evident by more or less psychic confusion, a disappearance of related contents of judgment from the field of consciousness, while those elements nevertheless may have been received and retained in the subcon-

sciousness; and this confusion and loss of mental grasp of outward reality occurs as a break and dissociation in a process of organic life *directed toward action;* it is, that is to say, a loss of right conduct, a failure of normal mental control of action. It is important to notice this distinction, for an interruption of a normal action toward outward things, an arrest of ability to respond to stimulation in right action, is not identical with a loss of psychic motive power or a proof that mentality has vanished where it ceases to do work. The psychic power may remain, though at some point it is rendered ineffective by a break in the mechanisms of its transferrence.

Moreover, these losses of memory are seen to be insufficiently accounted for solely by mechanical brain theories of mind in view of other results of physiological research. There is a diverse complexity of phenomena which the clinicians have discovered. The different kinds and combinations of memory-lesions—approximately as many as permutations of the senses may be counted—compelled them to break up the intellectual areas into an increasing number of image-centres; while at the same time experience indicates in these cases not so simple a location of affairs, but rather partial and diverse combinations of several of these psychical centres. Hence these diagrams for such psychic combinations become too complicated and conflicting for physiological explanation, and consequently physiological psychology is content either to render a purely descriptive account of the observations or else to resort to more or less metaphysical hypotheses.[1] In his acute analysis of memory, Bergson has given the clew to the physiological interpretation of aphasias, which in the present state of knowledge seems to be most promising: "What the injury really attacks are the sensory and motor regions corresponding to this class of perceptions, and especially

[1] Bergson, *Matter and Memory*, pp. 156 *seq.*

those adjuncts through which they may be set in motion from within; so that memory, finding nothing to catch hold of, ends by becoming practically powerless; now, in psychology, powerlessness means unconsciousness. In all other cases, the lesion observed or supposed, never definitely localized, acts by the disturbance which it causes to the whole of the sensori-motor connections, either by damaging or by breaking up this mass; whence results a breach or a simplifying of the intellectual equilibrium, and, by *ricochet*, the disorder or the disjunction of memory" (p. 231).

Memories, then, are not destroyed, but the power of actualizing them may be impaired. "That which is commonly held to be a disturbance of the psychic life itself, an inward disorder, a disease of the personality, appears to us, from our point of view, to be an unloosing or a breaking of the tie which binds this psychic life to its motor accompaniment, a weakening or an impairing of our attention to outward life."[1] These sentences of Bergson penetrate far into the meaning of abnormal mental phenomena: "All the facts and all the analogies are in favor of a theory which regards the brain as only an intermediary between sensation and movement, which sees in these aggregates of sensations and movements the pointed end of mental life—a point ever pressing forward into the tissue of events, and attributing thus to the body the sole function of directing memory toward the real and of binding it to the present, considers memory itself as absolutely independent of matter. In this sense, the brain contributes to the recall of the useful recollection, but still more to the provisional banishment of all the others. We cannot see how memory could settle within matter; but we do clearly understand how —according to the profound saying of a contemporary philosopher—materiality begets oblivion."[2] From this

[1] *Matter and Memory*, p. xiv. [2] *Ibid.*, p. 232.

last suggestion of the inhibitive oblivion-power of the brain some light may be thrown upon the suppression of sensibility by hypnotic suggestion.

Furthermore, the general view of interaction, as well as co-ordination between mind and body, which is confirmed rather than set aside by critical analysis of the aphasias, receives further illumination from what is beginning to be known concerning the restoration of lost mental functioning through the substitution of another cerebral connection for one that has been impaired, forming artificially indirect communication between severed sensory and motor tracts.

Very little has been demonstrated as to the extent, if any, to which by purposeful training with mental effort an uninjured brain-centre may be induced in time to function in the place of a corresponding area which has been injured; although in some cases impaired brain function, notwithstanding local lesion, has been known to be restored. Some roundabout nerve connections have been made by surgical skill, and then by a continued process of mental attention and training the separated cerebral centres and muscles have been sufficiently co-ordinated to restore the lost power of movement.[1]

Looking back over the questioning and researches of physiological psychology, which we have just been surveying, we take our position on observed facts when we rest on this fundamental statement of Mr. Sherrington in his authoritative work on *The Integrative Action of the Nervous System:* "We thus, from the biological standpoint, see the cerebrum, and especially the cerebral cortex, as the latest and highest expression of a nervous mechanism which may be described as the *organ of, and for, the adaptation of nervous reactions*" (p. 392). "Cer-

[1] See *Elements of Physiological Psychology*, Ladd and Woodworth, p. 243. Also Ladd, "A Suggestive Case of Nerve-Anastomosis," *Popular Science Monthly*, August, 1905.

tain it is that if we study the process by which in ourselves this control over reflex action is acquired by the individual, psychical factors loom large, and more is known of them than of the purely physiological *modus operandi* involved in the attainment of control" (p. 390).

We have outlined thus far the natural history of personality from the behavior of lowest organisms along the lines of life's struggle and ascent up to the self-conscious conduct of man. From the earliest beginnings, so far back as knowledge may go, so deep into the mystery of origins as scientific imagination may peer, something which we are aware of as psychical seems to be involved in that which appears as physical: at the source of being and throughout life some energy seems to be immanent, which cannot be weighed in a balance or measured in equations of motion in space—an energy which is continuous through time, but which is not to be apprehended by the intervals that are marked for us by our clocks; an energy active in every moment of our consciousness, and known most intimately and ultimately in the exercise of our will, which nevertheless eludes definition, yet abides as indestructible reality and affirmation of ourselves. Such is the spiritual significance of the natural history of the personal life.

On the physical side it has come to its present consummation in "the dominance of the brain." On its psychical side it has come to its supreme revelation in "the law of the spirit of life." These two have been made one in the embodied spirit of man. What has thus been joined together in nature is not to be put asunder by our philosophies; it is the higher unity realized in the common experience of personal life.

CHAPTER VI

PERSONAL INDIVIDUALITY

As we look up through the course of life, standing at the summit of all nature's ways, distinctly outlined against the sky is the individual man. Personality is individuality. Toward individuality a tendency of life has been working from far-off beginnings; individuality has at length cleared itself from the earth and is disclosed in its full significance. Individuation is thus discovered to be a natural principle of spiritual evolution. We are come, therefore, to the point in our pursuit of meanings through nature where we have to consider directly the fact, and the interpretation of the outstanding fact, of individuality in the personal life.

Before proceeding to do so, a preliminary observation is needed. One striking resemblance is to be noticed between two opposite world-views—the view advanced by a purely physical naturalism, and the other advanced by a metaphysical idealism, concerning the nature of things. Both conceptions alike are characterized by the absence of visualizable concreteness, and each runs back into a shadowy idea of some kind of an omnipresence. Positive science and idealistic philosophy meet unawares in an initial postulate of an undifferentiated something everywhere existent; and concerning it each affirms, though in different terms, the same predicate, that it *is*. This noticeable similarity at their starting-point of world-views, which in their subsequent development are so divergent, deserves more consideration than it has received among the advocates of either view, for diver-

gent views which are thus so much in accord at the point of departure may not prove so irreconcilable as it may seem at the end.

On the one hand is the idea of an undifferentiated medium, lying back of all the worlds—the omnipresent, undistributed ethereal something pervading unlimited space. The subsequent appearances of matter are differentiations of this primal hypothetical ether—a stress or whirl of it, an atom, a series of elements, molecules, elemental star-dust, condensing worlds, living matter, organic species, varieties, animal features, with scarcely distinguishable expression, up to the fully individualized form and face of man—so the endless procession of the advancing generations sweeps on and on—before what reviewing presence is it passing? Thus naturalism begins and ends with the unknown.

On the other hand, the one spiritual omnipresence is the unconditioned beginning, the absolute being, of idealism, and from its differentiation in time and space issue the many. In both these world-views also the original source or absolute substance is regarded as continually existent; the ethereal is the continuous medium, co-extensive throughout the material universe; the spiritual essence likewise abides amid the phenomenal, the one eternal something beneath all appearances. Naturalism may thus be said to be a spiritualized pan-materialism, and idealism a substantiated pan-spiritism. To both alike the realization of individualized personal life presents the final problem of existence. In the Light of perfect Life the interpretation of the meaning of it all is to be sought.

From either side, therefore, we must turn to the manifestation of the Life, as it is self-luminous in the fullest and clearest human consciousness, if we would find the ultimate revelation of the meaning of the world. In so doing we have next to note such distinctive marks as

have not yet been observed by us of the natural character of personal individuality.[1] From the physiological point of view the natural culmination of the evolution of individuality may be summed up in these words of Mr. Sherrington: "The motile and consolidated individual is driven, guided, and controlled by, above all organs, its cerebrum. The integrating power of the nervous system has in fact in the higher animal, more than in the lower, constructed from a mere collection of organs and segments a functional unity, an individual of more perfect solidarity."[2] This integration of the individual organism on the physical side has advanced to a high degree of perfection in the fine co-ordination of the senses which enables an animal to distinguish objects at a distance, and to adapt their movements to their perceptions according to their needs. The "distance-receptors"—the senses of sight and hearing—and especially binocular vision—mark in the more intelligent animals the attainment of physical power to care for themselves, to secure their own safety, and to act in an individual manner.[3] This physical preparation and basis for individual life man receives as his birthright in its finished perfection. He sums up in his body the individualizing tendencies and results of nature; he begins his career as a consummate individual organism integrated through his brain.

We have, then, to take full account of nature's last

[1] The process of individuation in nature up to man has been discussed by the author in *Through Science to Faith*, chap. VIII, to which reference may be made without repeating here the reasoning in that chapter. A dynamic theory of individuation is advocated by Professor C. M. Child, *Individuality in Organisms*.

[2] *Op. cit.*, p. 353.

[3] "The distance-receptors integrate the individual not merely because of the wide ramification of their arcs to the effector organs through the lower centres; they integrate especially because of their great connections in the high cerebral centres. Briefly expressed, their special potency is because they integrate the animal through its brain."—(*Ibid.*, p. 353.)

chapter of individuality as it is realized in man; what is its significance as an end-fact of nature? One aspect of it at once arrests attention: man, by virtue of his own individuality, individualizes the world without him. To his intelligence things can be specified; Adam, when he arrives, gives names to things. In the world without, objects are not separated and classified except as we draw lines across the face of nature and define the distinctions between things. Nature itself is one spatial continuity. The horizons are but limitations of our field of vision, not circles drawn between earth and sky. Our names mark conceptual lines of division. This is not to say that scientific classifications are arbitrarily made, for they describe structural features or temporal sequences, which intelligence may discern and follow in what lies as an undivided whole without break in its continuity in the material universe. Nature as a whole remains constant, while our distinctions of species, our diagrams of its forms of energy, vary with the advancement of our sciences, and they have repeatedly to be re-drawn. Even realms of nature that seem as different as the inorganic and the organic are found to be most closely related—it is living matter with which science has to do. And in the organic world the familiar distinctions between the vegetable and the animal shade off, and in the lowest forms of life so merge into one another that no hard-and-fast divergence between them can be marked. Scientifically, it is hard to say where one thing ends and another begins; but nevertheless our intelligence individualizes nature for the rational relations and purposes of life.

To what extent animals beneath man have this individualizing intelligence is a doubtful question of comparative psychology. To a considerable degree it must be attributed to the higher animals, while in the lower organisms it may extend no further than ability to distinguish food from not-food, or an object adapted or inim-

ical to their existence. The difference does not lie so much in the range or power of definition of the senses as in the discernment of the meanings of things; not in what animals or men see with their eyes, but in what the objects seen may signify to them. Animals may have before their eyes the same landscape that lies before our eyes; but what they perceive while looking may be something altogether unlike what we apperceive. The view your horse takes from a hilltop is not your view of it. Only in mental vision is sight made perfect. Mind perceives things in their relations; thought isolates and re-combines outward objects. Reason individualizes its world, and then re-creates it. A Platonist would hardly find himself in contradiction with modern scientific conceptions of conservation and continuity if he should assert that differences in nature are resolvable into differences of ideas—ideas taking form in things, and things distinguished by their ideas.

Herein appears the unique marvel of personality; it becomes conscious of itself as individual, and it individualizes its world; it is the one discovering itself among the many. In the midst of uniformities of nature, moving at will on the plane of natural necessities, weaving the pattern of its ideas through the warp of natural laws, runs the personal life. On the same plane and amid these uniformities, yet itself a sphere of being of another order; in it, yet disentangled from it, and having its centre in itself, it lives, and moves, and has its being, breaking no thread of nature's weaving, subject to its own law and manifesting a dynamic of its own. It is as though this texture of nature were like a thin network, unfolding in an unseen element, waving in every wind that comes and goes as it listeth, and as though at some points in this fine weaving of nature there had been condensed upon it, from out the unseen in which it exists, spherules of another elemental order, as the clear dewdrops formed

out of the invisible air above are seen hung upon the leaves of the trees and sparkling on blades of grass; soon these dewdrops disappear into the air from which they came, as our life is as a vapor, and it vanisheth away. The grass, too, withereth, and the flower fadeth; but these personal spheres of being, slightest, frailest of all things visible, momentary films of iridescence in the light that shines from afar—they are not of the earth earthy; they appear from out another element than that upon which for a brief moment they are dependent, and into which they vanish away. From whence for our evanescent moment of visibility we have come, science does not know, nor into what invisibility we shall be changed.

A mere metaphor, such as this, can serve at best for but imperfect visualization of an idea, and no imagery drawn from the sensuous world can be more than suggestive symbol of things spiritual. Personal experience is reality of life which words at best can but reflect in broken lines. Certain affirmations, however, which are implicit in the consciousness of personal individual being may be distinctly brought out and recognized.

1. It asserts its worth to itself. Realized individuality is a positive assertion of the value of life. A personal being, clearing its self-consciousness from all the world around it, comes to a sure sense, likewise, of its own life as worth living, and hence attains the distinctive power of giving values to things as they serve its life. It brings a new, self-made scale of values to the world; its individual welfare is the measure of things. Nature working vaguely, vastly for the preservation of the species, preserving the type, is henceforth in man no longer careless of the individual. The little child soon begins to show an individuality that shall look out for itself; self-conscious aims, self-development, attainment of self-chosen ends for better or for worse, become the deter-

minate marks of personal character and achievement. The natural instinct of life emerges into the personal will to live, and the will to live supersedes henceforth the law of natural selection, and is the purposive power of determinative individuality. There is elemental psychology as well as fundamental ethical value in the word of the Son of man: "For what shall a man be profited, if he shall gain the whole world, and forfeit his life? or what shall a man give in exchange for his life?"

This positive sense of worth as finally realized in man's individual will to live it may seem a paradox to describe as the natural supernaturalness of his being; but that is not a contradiction in terms. It marks his ascent out of nature into the personal. How near the higher animal comes to it, and just misses it, may be a matter of conjecture, but nature in man has not missed it. It has made the spring; it has gained the spiritual level; henceforth with the consciousness of worth a new era opens, personal selection masters and guides natural selection, the age of the human is to be the dominance of the ideal. First that which is natural; afterward that which is spiritual. Henceforth the spiritual man judgeth all things; the thinking mind, the spiritual man, declares to the earth beneath him and to all the world that was before his advent, and directly to his own serving brain: "My thoughts are not as your thoughts, neither are your ways my ways."

How this new-born sense of the worth of life becomes moralized and is transformed into a self-sacrificing sense of duty will be further considered in a later chapter, as we shall observe the significance of the fully developed Christian consciousness. We mark at this point the emergence from nature of a sense of life as having worth, in the increasing light of which all things shall become new. The subsequent transcendence of duty is not denied when we discover the germinant immanence of it in nature.

2. Closely associated with this initial sense of the value of the individual life for its own sake is the conscious solitariness of personal being. The person in the innermost consciousness of his being lives alone. The heart knows its own secret; the soul has its inner sacredness where it may dwell apart. Opened it may be to all the world without, and welcoming to its hospitable hearth all friendly visitors, yet it dwells in the quietness of its own thoughts, and in the secret of its being abides alone with itself and its God. Moreover, the individual knows others, and is known of them, only as they exist each in the reflection of his inner light. Direct knowledge may be a divine knowledge of souls, but it is not human.

We are concerned at this point not immediately with the moral value of this solitariness of individual being, but with the psychological significance of it. Isolation of the personal entity is a final fact of nature with which genetic psychology has to do. No theory of human nature is true to experience if it resolves into mere fluid sequences and transient associations this ultimate solidarity of human individuality, as it is presented in every normal man's experience of himself. It is witnessed even by its apparent exceptions; for it underlies the phenomena of dissociated personalities, and in many cases is recovered from such dissociation. The reality of the dynamic centre and core of personality is the final unanalyzable fact of personal being. It is an inner force potent enough, so long as conscious life lasts, to throw all forces from without away from it. It is at once the attraction of persons to persons in the social order, and also the centrifugal force of the individual person, keeping the whole universe from crushing it out of existence, while holding its own sphere and orbit in the spiritual realm. Whether or not this individual dynamic centre—the power of the will to live—once existent can ever be annihilated; whether the dissolution of the body, which is the present immediate

field of its lines of force, shall prove also to be its dissipation, or whether it may draw to itself other elements needful for its continuous action—these are questions that the natural apartness and dominating power of individual being at once suggest; the answer can be best read in the further light of the full Christian experience of the inner life.[1] At this point it is sufficient to observe the unique actuality of individual being in its psychical distinctness, as it has been defined in the following words by one of the earlier experimental psychologists: "Preliminarily, the totality of what is immediately given in space for *all* may be designated as the physical; on the other hand, that which is immediately given to only *one* but is accessible only through analogy to all others may be designated as the psychical."[2]

The individual person is a self-centred world, but the circumference of the sphere of personal being admits of indefinite expansion; without measure its contents may be enriched. Hence the idealists speak not without reason when they say that there may be degrees of personality. There are low levels of human life, hardly seeming to be lifted out of the swamp and worthlessness of mere animalism; and there are higher levels of personal attainment, sunny and fruitful, of large horizons; and some personality also so supernal that as we look up to man in the highest, we can say with the Hebrew poet: "Thou hast made him a little lower than the angels."

Because the individual person, the "experient centre," is capable of ever-enlarging contents of experience, and of making these contents elements and moments of his own being, the personal life is also the social life. Truest individuality becomes richest fellowship. Individuality is not realized perfectly in social isolation. Self-inclusiveness is not necessarily exclusiveness of

[1] See following chapters.

[2] Mach, *Erkentniss und Irrthum*, s. 6.

others; rather it is a condition and means of comprehending others within its own enlarging life. One becomes more and more himself in and through his participation in others, he in them and they in him. Personal individuality is at once a power of self-withdrawal and of self-revelation; it could not be the latter unless it were also the former. At its highest and best a man's individuality is realized in its power of communion; he is himself an organized unity of flesh and spirit, a conscious synthesis of sympathies, affections, achievements, of the love of others as himself. In this aspect of it the supreme realization of the personal life is the apostle's ideal: "Then shall I know even as also I have been known."[1]

3. Another striking feature of individuality presents itself in connection with those just mentioned—its incalculability. Where life has become individualized, it has become a point of indetermination. Whither it will go, or what shall come of it, is definitely to be known only after the act; and the issue can be calculated only in a general way beforehand, at best under some law of averages. Large portions of human conduct, it is true enough, are reduced to habits, and so far may be foreknown; the personal will is trained and accustomed to run smoothly and regularly in social grooves of ordinary intercourse. The individual is not expected to break violently loose from the larger social will which has grown up through the lives of the generations before him—the

[1] Bosanquet has some suggestive remarks concerning this aspect of personality: "If a man has more power of comprehension and inclusion so that less is outside him, and that what is outside him is less outside him, his own unity and individuality is so far and for that reason not less but greater. . . . Consciousnesses are of all degrees of comprehensiveness. . . . In a word, then, we are to think of the individual as a world of experience, whose centre is given in the body and in the range of externality that comes by means of it, but whose limits depend on his power. He is a world that realizes, in a limited measure, the logic and spirit of the whole, and in principle there is no increase of comprehension and no transformation of the self that is inconceivable as happening to him." (*Op. cit.*, pp. 286–8.)

social good-will which has become embodied and is potential in the customs, institutions, laws of civilization, and public opinion amid which he lives. The social solidarity endures though revolutions come and go. Nevertheless, the individual will has in it a certain unpredictable element. The exceptional in human conduct is likely almost any time to turn up. The common man will show power on occasion to do an unexpected deed. One held in honor may become a fallen leader; another may surprise the world by a heroic deed. Human nature, as we say, is very much the same everywhere; yet all attempts, like Buckle's to write the history of civilization as a volume of statistics may be computed, become unreal and unhistorical, as they miss the very heart and movement of human progress—the passion, the power, the song, the tragic hours, the defeats, and yet the onward march and victories of the generations. Such attempts fail to be real history just because men are not entirely calculable machines; the peoples are not mere masses of statistics; individuals come to their hour in unheralded leadership; and in a moment the old order passes and the new age is begun. The advancing point of life, as Bergson would say, is indeterminate.[1]

4. Again, personal individuality evinces its unique character by its selective formation of its own proper environment. It thereby creates relations fitted to its well-being. In so doing personality does more than merely carry forward the course of previous animal evolution on the same level as before its advent; by it life, fulfilling the old, is lifted up to a higher plane of development, and forms for itself a new social order. The law

[1] Mr. C. Lloyd Morgan maintains that completeness of knowledge would not render the future predictable. He says: "I hold that all scientific explanation is after the event, and that all scientific prediction is of like events under like conditions. The supposed adequate knowledge embraces the constitution of nature when it is finished."—(See *Instinct and Experience*, pp. 148 *seq.*)

of natural selection is superseded by the law of personal selection. Under that law, and in the order of personal society, individuality has free play and a wide range, which render the world of human relations uninterpretable in the determinations of the pre-existing natural order. Inanimate nature with its indestructible matter and its inviolable laws is still the background of man's being and the frame within which the scene of his action must be limited; but he himself in the foreground of nature appears in another circle of relationships, moves freely in a human interdependence, and gathers around him the companionships amid which he becomes fully and happily himself. The human child has this personal environment for its birthright, and finds in the social order the matrix and mould for its growing self-consciousness. The child in the cradle is not destined, as a lamb in a flock, soon to be unknown even to its mother; man in his strength is not predetermined to be an indistinguishable unit in a herd; human society is not as a teeming mass of co-operative ants or a hive of industrious bees—only in a dehumanized accounting are men known by numbers and regarded as hands, or labor reckoned with tools. If not in the factory, in his home, however humble, each man is known by his own name, and he possesses his life abundantly among his neighbors, comrades, and friends. The life of a man ought not to be lost in the indistinguishable herd, or amid the mechanical whirl; it is to be found and saved in a social order; it is born into the rights and the obligations of the moralized organic life of humanity. These social relations are not constituted in the contiguities or sequences of things. By no accidental cast of molecular combinations and possible nerve permutations, though their variations were carried up to the mathematical infinite, could this personal order of relations conceivably have been hit upon, and still less established in the permanence of the

human order. For the order of personal individualities is not formed on a physical basis only; it is determined in a psychical recognition of individuals as fellow partakers and joint heirs of the same human inheritance and worth; it is maintained and developed from generation to generation in the consciousness of personal relations and the free action and reaction of individual wills in common endeavor and for the well-being of the community. In this social order the individual has discovered the oneness of his self-interest with the interests of others, and further the human society has developed the necessary laws of its welfare, integrated its individual powers, and made its own history. Animals have their pedigrees; man alone, it has been said, has a history.

So far from its being true that individualism must give place to socialism, personal individualities are the natural units of social construction. To treat the individual value as nothing and social welfare as everything, would end in the result of multiplying plus into minus, nothing would come of it. Individual ethics is the beginning of social righteousness. The love of self is measure for the love of one's neighbor as one's self. Selfishness does not consist in the love of self but in an arrest of it; it is stopping at self, and not expanding into love of humanity. As social order, on the one hand, cannot be built on the destruction of individuality, so likewise, on the other hand, individuality is a barren and fruitless thing if it is not developed in society. Toleration is but a half-way virtue, while faith bears its perfect fruit in catholicity.

But to enter into this field of social ethics and Christian catholicity would carry us aside from our path. It is enough if we glance in passing at Milton's grand conception of the state: "A nation ought to be but as one huge Christian personage, one mighty growth or stature of an honest man, as big and compact in virtue as in

body, for, look, what the ground and causes are of single happiness to one man the same shall ye find them to the whole state."[1]

5. Another outstanding character of individuality is the increase of psychical energy in personal life.

The sum of physical energy is constant, and within the known limits of the material universe the quantity of matter remains the same. This is only a scientific way of believing in the trustworthiness and veracity of nature; scientifically experimented with, nature proves true. But the history of mind cannot be reduced quantitatively to this physical law of conservation; it cannot be predicated of the psychic world without qualification that the sum of its energy remains constant. On the contrary, experimental psychology asserts a principle of "increase of psychic energy." This does not mean merely that there may be an acceleration of the rate of thinking, as there is acceleration of motion in the physical sphere, but that there may be also an increase of ideational power. This may appear a surprising statement from the physicist's point of view; if this indeed be so, it is obvious that personal energy must have in part its origin from outside the material system, and receive influx of power from beyond the physiological organization in which it appears. This allegation, therefore, of the increase of psychological energy in the development of personality and through human history requires close scrutiny; no fact of more unique significance for the determination of our nature and destiny than this, if it be an ultimate fact, can well be imagined.

Among the moderns, Lotze suggested a principle of psychical increase, and Wundt has more explicitly affirmed it. In all physical processes, so Wundt reasons, a principle of equivalence obtains; cause and effect are quantitatively equal. They are not identical in the

[1] Milton's *Reformation in England*, Preface to Bk. II.

sense that they can be substituted for each other. The objects in a causal relation may have different properties, but they have a common measure as quantities. The psychic processes, on the contrary, in general elude quantitative determination. So far indeed as their degrees of felt intensity are concerned, or the extent of their contents—what an idea may include—they may be compared with one another, and so far measured as quantities. Hence we may properly speak of degrees of consciousness, and of more or less feeling and mental activity. The report of a canon, for example, produces a stronger impression than a pistol-shot, but we cannot measure mathematically the difference in our consciousness of sounds in the same way that we can measure the differences of the vibrations of the air. Our state of mind at the time qualifies our awareness of sounds. Moreover, the conceptions of the grown man are richer in contents than those of a little child. Our ideas are constructed out of simple perceptions; yet the resulting idea is not by any means so compounded of the perceptions which enter into it that it may be regarded as their sum; it is a new act of our consciousness, which as such always contains a creative synthesis.[1] An idea, that is to say, is not merely an addition of things; it is putting psychical elements together in a creative manner. Thought gives form to things. Thus an idea of any object of sight, such as a flower, a star, or a face, is more than the sum of the sensations of light, of the sensory and muscular movements involved in its production, and of accompanying feelings of pleasure in color or beauty. While dependent on these conditions, the idea is something quite different from any or all of them put together; it is a psychic act and a consequent mental production. And in all the higher intellectual processes this principle of "creative synthesis" holds good; we per-

[1] Wundt, *System der Phil.*, I, p. 302.

ceive relations of ground and consequence in particular cases of psychical causality, but there is no quantitative equivalence between related ideas. "The spiritual life is extensively as well as intensively ruled according to an increase of values; extensively in that the manifoldness of the spiritual developments continually broadens itself: intensively in that the values arising in these developments increase according to their degree."[1] Not only do the elements united in such mental synthesis gain in the aggregate a new meaning, but, as Wundt observes, what is of distinctive import, the aggregate idea is itself, indeed, a new psychical content that was made possible by those elements, but it was by no means contained in them. This is most striking in the more complex construction of a work of art or a train of logical thought.

Such "increase of psychic energy," or "principle of creative synthesis," as Wundt designates it, is not contradictory to the law of conservation of physical energy; for the two run on different planes and hold true of relations that are not identical. The latter has to do solely with quantitative measurements; the former with relations of being that are qualitatively given in consciousness. Forces working on different planes may have some correlation and possible interactions; but they do not come into contradiction, as a flying machine in the air, crossing a railway, cannot collide with a train passing at the same moment. But there may be signalling and intercommunication between them. The physical law of conservation rests on the postulate of a continuous material substratum or medium; the psychical rests on the postulate of a continuous psychical existence after its kind. The measure of the one is not to be assumed as the law of the other. Natural and spiritual laws may be analogous, but not identical. The psychical law is

[1] *Ibid.*, I, p. 302.

to be found in experience of the psychical. The psychical processes, as thus given in personal life, as Wundt maintains, manifest a principle of increase, as well as of possible decrease, according to their own kind and degree of variation; they are not to be weighed in any physical balances, but to be determined on their own scale of values for life. We have given in our personal life a different kind of ability from that manifested in the world without; the power, namely, to produce qualitative values and to measure their worth in relation to our desires and aims. This personal selection of values for life is another law than the law of natural selection of forms fitted to survive. Both work together in the unity of experience.[1]

The increase of psychical energy is disclosed not only in the development of the individual but also, it appears, in the development of society and as a progressive principle of civilization. One might say that with the accumulation of human experience from generation to generation the power-house of humanity has been enlarged and improved; the human potential, from which individuals may draw light and power, has been immensely increased. The psychic forces of the community are clarified and intensified. This is obvious in many ways. It is true of the concepts in which we, children of the generations past, are taught from our birth to think; of the ideas which have become available for us in the inherited uses of words, as well as in institutions and laws—all these being so much stored up psychical energy from the social life of the past. This holds true of the whole human environment in which the individual person finds means for the larger exercise of his powers, and opportunity for himself to contribute something to the fairer idealization of human life in the years

[1] A confirmatory consideration might be adduced from the supposed "degrees of consciousness" as held by Bradley, *Appearance and Reality.*

to come. Such progressive enlargement and enrichment of man's life is the result of creative synthesis, and the increase by use of psychic energy. It is not to be comprehended in the cycle of a material transformation of energy; it is not to be plotted as a curve of physical energy returning into itself; it is pursuit of truth ever advancing into the light; it is a dominion of mind in nature making increase of itself without end.

In obvious actuality man has thus made his personal environment and is ever making his world new. Men as individuals have created a language, a social order, a human consciousness, a universal will, to the government of which there shall be no end. The common mind of a community, this "universal will of a race crystallized in language, custom, and religion," forming international law and world-wide humanism—all this is a psychical growth according to a psychical principle of mental progress; it is the work of the psychical dynamic of human history.

We may note, in passing, some minor indications of a psychical influence, subtly acting amid physical sequences, which at present are to be regarded as unverified, but which scientific researches may bring out into clearer definition. For example, the question may fairly be raised whether in any degree a man can make or remake his own brain, or does he have to take it just as nature gave it to him? Some anatomical observations are enough to raise more questions in this direction than they can answer. There are cases in which mental functions have been recovered after they had been lost by injuries in the brain areas in which they are located; and it is an open question whether in such instances of partial or more complete recovery some other nerve-paths have been utilized to resume the interrupted communications, or whether it is ever possible that some unused portion of the cerebral hemispheres, or some awakened

activity of the opposite hemisphere, may be substituted and function for the injured tract, or to what extent by practise voluntarily pursued substitutionary functions in the higher brain areas may be induced, as notably in the case of Helen Keller. Modern surgery has succeeded in restoring broken communications between centres in the sensori-motor tract by cutting one nerve and joining it to another, and thus in a roundabout way re-establishing the nerve-circuit. Such cases are not numerous enough to justify too confident conclusions; so far as they go, the significant fact is that after an operation in which the surgeon had made a new nerve-circuit, the patient had to learn by continued mental effort to use it; the man had to teach his brain to utilize the artificially made connections, to do the work which he required of it. That would seem to indicate some direct action of mind on the cerebral mechanism. The conditions and limits of physiological maturity may restrict to a very limited degree (if it proves possible at all) man's capacity of repairing his own brain, but if a single clear case should be demonstrated of any such ability by voluntary training to cause one cerebral area or neural connection to function for another, that would set aside the theory of parallelism and render probable some efficient interaction between mind and body.

Another consideration not to be overlooked in this connection is the effect of personal energy as a new force entering into natural evolution. From personal centres new energies radiate out into nature, modifying its forms, and subjecting its forces to unwonted uses. Human selection alters the course of natural selection. The psychic energies are not creative in the sense of adding to the sum total of matter, but they are directive and transforming forces, carrying natural means to ends beyond nature. The compelling will is not a power acting upon the natural forces from without, by so many suc-

cessive shocks throwing the world out of its appointed courses or disintegrating its elemental structure. It is not in this sense a supernatural force; rather it finds itself domesticated in nature's heart, and obedience to its compelling influence becomes nature's higher law. Conceive of the power of personal will in nature as we please, the directive control of it is evident wherever man rests his foot and builds his home. An embodied will gains mastery over the matter of its embodiment; man is the tool-using animal, and things serve his thoughts. Nature may bring him back to the dust at last, but while he lives, he reigns. And man, the thinking reed, as Pascal calls him, shows his superiority to the end in that "he knows that he dies."

Individuality, as we have thus found it realized in man's self-conscious life, is the outcome of natural evolution and the dominant fact of nature. To account for it we may start either from an assumption of an original, ethereal unknown something omnipresent in space, or from the postulate of self-existent omnipresent spirit recognized in our human life. Considering each of these views hypothetically as working theories, we have put them to the test at successive points, inquiring which of them, all along the course of nature, seems best to fit the observed facts, and which theory on the whole renders conceptually more intelligible the actual results which are wrought out in human experience. We apply the test of economy, and ask: Which working theory of the evolution of personality and its contents can be thought out with the introduction of the least number of subsidiary hypotheses?

If we take the materialistic supposition, we are not long in discovering that we are building the house upon the sands. Dig down as deeply as physical science has gone, or seems likely to go, it finds no bed-rock on which to rest the firm foundations of the heavens and the earth.

In matter, conceived as matter only, there is given no basis for the rational nature of things. Scientific speculations as to the ultimate materiality of matter have been changing since the early time of Heraclitus's doctrine of ethereal fire as the original form of existence, from which through strife and enmity all things arise, and his teaching also of the perpetual flux of things. In this present age Lord Kelvin's mathematical conception of a vortex-ring passes into the still more recent speculations concerning electrons and we know not what ethereal knots, stresses, or streamings. Always the shifting sands of scientific hypothesis underlie scientific philosophy. The knowledge gained by research is true as far as it goes, and often convertible into practical uses; but ever as it advances, the reality of things recedes from its grasp.

Furthermore, along the empirical way, starting with the idea of materiality, we have observed difficulties of interpreting the observed facts continually multiplying. Paths that appeared at first promising run out and lose themselves in impenetrable thickets—as the gross materialism of physiological philosophers of the last century was soon swamped, and their crude notion of extracting thought as a secretion from the brain has been abandoned; or as the more recent theory of mind as only an epiphenomenon—but an echo or shadow accompanying the automatism of the body—fails to push its way through the perplexities of psychology into which it too hastily plunged. Subsidiary hypotheses must be made at every turn, if one seeks to guess what the movement and way of life has been by the aid only of a guide-book of mechanical philosophy. A pseudo-scientific materialism stumbles and falls over itself at the very threshold of personal consciousness—before a simple yet complex sense-perception (the unity at the very beginning of personal life of the physical and the psychical); so also it ends in confusion of differences and in a route of allied

suppositions until finally it has no recourse left but to fall back on its basic supposition of some "prepotent cell." Matter stripped of all adventitious characters is seen to be just matter, and nothing else. "There is one, and only one method of refuting materialism: it is to show that matter is precisely that which it appears to be."[1] At the end of this way, then, we are lost in hypotheses that cross and recross each other, and lead nowhither. All purely materialistic theories begin with formless matter, only, "lastly, to fill consciousness, they invent an incomprehensible action of this formless matter upon this matterless thought."[2]

How fares it, then, with the other postulate of a spiritual energy of evolution? Taking our point of departure from the consciousness of personal energy, postulating a spiritual omnipresence in which the universe has its existence and movement, we follow a way that runs from point to point in the same direction, and the course of which is marked by signs becoming more explicit and assuring. On either side of this straight way of life the unknown shuts us in, and at times perplexities thicken, but they never close up and render it impossible to follow the path on and on. At the utmost reach of knowledge and ascent of our reason, we are not brought up before a blank contradiction, although we shall be left facing a mystery of spiritual life above us and beyond—a mystery not of utter darkness, but of ineffable light.

Kant could say: "Give me matter, and I will construct a world." But no one may say: Give me matter, and I will construct a mind. "I will" is the constructive power assumed; and without the postulate in the beginning of that energy which is known really, though but in part, in personal experience, nothing follows and nothing exists.

The interpretation of nature is man; he is himself the light of nature at its highest point. This is at once the

[1] Bergson, *Matter and Memory*, p. 80. [2] *Ibid.*, p. 9.

naturalness and the spiritual transcendence of his person that he is at the same time the work and the worker, the issue and the judge of his own evolution. Of him it is to be said that he was curiously wrought in the lowest parts of the earth, and that all his members in continuance were fashioned when as yet there was none of them. He is become actor and spectator of his own life, the final judge of all things from which he came forth, himself nature at her best, yet holding himself the heir of a realm of higher worth. Aware of his kinship with the dust of the earth, he lives himself in a higher order a life that does not return to dust and ashes. Such is the natural significance of spiritual personality.

Throughout the preceding chapters we have not deemed it serviceable to faith to suppose that gaps in nature are necessary in order that spirit may come in. Consequently we have not been concerned to find the distance between inorganic and living matter narrowed by increasing knowledge of both; the distinctive character of each, however, closely allied in their origins, remains more significant than ever. Neither have we deemed it essential for valuation of man in his spiritual dominance to draw a hard-and-fast line across the process of the evolution of mind between animal and human intelligence; the result of the process, the value finally attained, is the evidence of man's spiritual dominion. Nothing is to be gained, and much would be lost, in the estimate of the intrinsic worth of human nature by supposing it to be absolutely foreign to all the nature in the midst of which it has come to its fruition. The classic saying, "I am a man and think nothing human foreign to me," is to be held true not only of human nature, but of all nature; I am a man and consider nothing natural foreign to me. These two strands, the physical and the psychical, have been interwoven in nature from the beginning of days; they are not to be disentangled from the warp of our being.

The natural and the spiritual have gone together and belong together; they are made one in life, and death itself shall not divide them. Far down as eye can see into the origins of things, far on as hope may gaze into the mystery of our destiny hereafter, these two, nature and spirit, go ever together in history and the prophecy of our creation, and without either the other would not be made perfect.

The objection once commonly raised, but now lingering only as an inherited popular prejudice, that a biological view of man's genesis reduces him to the level of the beasts, may without further consideration be dismissed as superfluous. But a real obstacle to a reasonable faith is raised when, on either side, the fact of man's twofold nature, as it has been fashioned through a continuous evolution, is questioned. Not the denial of evolution but unbelief in the unity of the natural and the spiritual is the vitiating falsehood alike of science and of faith. It were indeed a betrayal of personality to doubt the existence of either in the reality of the whole. Let either vanish and the other goes. We know ourselves in distinction from the world without. Annihilate knowledge of the existence of the external world, and there is nothing left to bring us to consciousness of ourselves. Or if we reduce to a passing shadow our personal being, the whole material world also is as a shadow that passeth away. One might as well imagine the canvas to be burned up, and yet the forms and colors, and actuality of the painting to abide, as to conceive of nature and meaning, matter and form, body and mind as existing in absolute apartness, without mutual relation, the subject having no object, and the object no existence except as thought by the subject. The only analogy to supposed spiritual existence in absolute isolation from outward nature which our experience might suggest, would be the loss of consciousness in a dreamless sleep that would be without awakening.

It can be added that it is in keeping with the profound unity of nature and spirit that our modern age, which is above all things scientific, is also more than others the age of the poetic interpretation of nature. It is striking, although on this view very natural, that the poetry of the scientific age should be a poetry in profound sympathy with outward nature, and that, so far from science banishing poetry, imagination is recovering spiritual meanings in natural objects. Modern poetry is a fresh, human interpretation of nature, and, more than ever before in the thoughts of men's hearts, out of doors are sung the songs of the spirit.

The question lingers with us, often nature itself seems to ask it of us: In our nature-feeling is there any real recognition of a common kinship of the spirit in nature? In other words, is our modern poetry of nature a reflection of our human feeling thrown back upon us from nature, or is it a revelation of some spiritual reality alike in nature and ourselves? Is it but an echo of our inner voice, or is it a word responsive to us, the meaning of which we are to interpret?

The lines of thought thus far followed would incline us toward the latter view. As, on the one hand, we have been led away from any identification of the personal life with objective nature, so, on the other hand, we are not left with a conclusion in which the material is lost by absorption in the spiritual, or else a soul or plurality of souls is attributed to nature. Philosophical analysis may discriminate the following points: (1) Nature and we are complementary elements constitutive of a reality which is comprehensive of both. (2) The relationship is one of mutual fitness. It is not a one-sided projection of the self into nature (as in naïve efforts to personify or render outward objects like ourselves); it is a realization in and through self-knowledge of what nature in its essential being and meaning is. Hence the idealists

may say: Nature comes to itself in us. Its end in the realm of ends is realized in our intelligent appreciation and love of it. And we likewise cannot come fully to ourselves, cannot realize the ideal ends of personal life, apart from and without love of nature.

CHAPTER VII

THE FULFILMENT OF PERSONAL LIFE IN JESUS CHRIST

JESUS is the fascination of history; all men are drawn to him. St. John's saying concerning the number of books that might be written of him, does not seem an exaggeration in view of the numberless lives of Christ that have been written; where in all the literature of the world are there not to be found reflections of his light?

The more recent views of Jesus have been historical rather than theological, critical rather than doctrinal. Modern writers have searched diligently to know what manner of man Jesus was. One way of approach, however, to his unique personality has hardly been attempted, yet it opens a view of the Person of Christ and his influence which our scientific age may gain for itself as men have not so seen him in times past. It is the way of approach through nature to Christ. Pursuing the line of interpretation of personal life which we have thus far followed from sign to sign of nature's meaning, we would draw near the supreme Person of Christ, and behold him as the fact of supernal significance in nature.

Personality has entered into this world as an idealizing energy; it has shown itself to be a transforming and re-creative power embodied in nature, and working in ever-widening radiation through human history. When in the fulness of time the Christ was come, the life was manifested; in him and through him the personal life is manifested in its inmost meaning and furthest influence. In the Christ and the world of his creation we have to do with the full energy and utmost possibilities of our human nature and destiny.

In this method of apprehending the Christ, and our life through his, we shall have to avail ourselves of all possible aid from historical studies as well as of whatever light modern psychology may throw upon the interpretation of the Christian consciousness, which bears witness of him. Personality is to be finally interpreted in the light of the Christ of nature, the Christ of history, and the Christ of experience. When we isolate from each other these three primary aspects of the Person of Christ, we break the perfect manifestation of the Life which is the Light of the world. The energies of the spirit are revealed in the natural preparation, the historical manifestation, and the abiding influence of Christ; only through the synthesis in our faith of these three witnesses to the Christ, may we apprehend the revelation in his person of the full meaning of our personal life.

When we begin the inquiry, what natural preparation may there have been for such personality as has been realized in Christ, we have at the outset to take into account the possible range of the natural development of the higher human life. We may not say, such a manifestation of life as the Christian world believes that Jesus lived is impossible, unless we can fix limits to the personal power of life prior to actual experience; not what we may think life may do, but what life does, can determine its possibilities. Personality is too vast, too unlimited, too mysterious, to be held within the confines of our immediate knowledge—for us to say where its power must end. It is a pure assumption also to limit by present knowledge the possible energy of personal life in its influence upon its environment, and its mastery of elemental forces for its own survival and ideal ends of being. No man knows that any other power in the universe shall be able utterly to destroy the personal will to live. For all we know to the contrary, a human will to live may prove stronger than a host of bacteria, though worms

destroy this body. Our knowledge of ourselves and the universe, although ever advancing, discovers no final limits to the dominance among material forces of the spirit that is in man. It is then with the actual dynamic of the Christ in the life of the world that we have to do.

We have learned that personal life in every new-born child comes as a fresh influx of power into the course of nature, not indeed breaking its continuities, but using them for ends beyond themselves. We have observed that personal life has manifested the potency of an ever larger and richer development. We have marked degrees of consciousness on an ascending scale; just above the absolute zero of self-consciousness the primitive man arose; then followed the cave-dwellers in some indefinitely distant age, and afterward appear the primitive tribes just learning to use tools—such men were the first-lings of nature's human fruit. Still further advanced we find among the living the barely furnished consciousness of the least intelligent laborer in his listless toil; then on the ascending scale from the beginnings of known history there are to be marked the several stages and degrees of civilization, the education of the people, the humanities and arts of life; and above these the higher attainments of intellect, the achievements of science, the consummate creations of genius. Now this whole range and mastery of personality, from the least to the loftiest, is nowhere to be regarded as completed, can at no point be said to have attained its highest possible fulfilment; rather it is prophetic throughout of more worlds to be conquered and an expectation of life more abundant to come. In this line of spiritual ascendancy the Son of man stood upon the earth; and he could speak of his coming again in glory at the end of this world-age.

Directly pertinent, likewise, to our inquiry concerning the natural history of the supreme Person is the observation that signal increase of spiritual power sometimes

occurs at some favorable point along a chosen line of natural descent. A cumulative heredity knots the threads of life together in a strong personality. Like a sudden variation in De Vries's primroses, a new genius blossoms forth. A specific form does not appear to be an altogether invariable mould for vital energy to take shape in. Personal life seems at times to crack its own mould.

This bodily frame might be compared to a springboard from which intelligence may take further and at times surprising leaps in the spontaneous exercise of its growing powers. Indeed, is not our physiological psychology itself busied just now in taking up and putting further back the fences around the margin of the mental field, opening consciousness wide to influences that come over its threshold from the sub-conscious, throwing up the windows, too, for the songs that may float in from afar through the super-consciousness? Who can tell, what science may cast its measuring line around the ultimate capacities, or weigh as in a balance the total possibilities of a mind already possessed of the riches of thought, and whose aspirations reach beyond the stars? A new potential of personality, we are saying, has at times appeared in history and natural tendencies and conjunctions have been the cradle in which the chosen person came to his hour and his supremacy. The psychical dynamic, history only can measure; no science can predict it, no statistics account for it. We may not therefore limit by our common experience the power of the spirit which we are told was given to Jesus without measure. The real question for us is, not how he could speak as never man spake, but whether he once so spake, and so speaks to us now.

Consequently, in view of the manifestation of personal energy in Christ and in the Christian consciousness, our inquiry must at first concern itself with what may be held to be historically true concerning the life of Jesus. This part of our inquiry, so far as necessary for our im-

mediate purpose, must be pursued in the light which recent historical and literary criticism may throw over the narratives of the Gospels. Biblical criticism may be called a science in a certain general sense of the word. It has a scientific character so far as it observes certain general canons of scientific research; as, for example, when it attacks the problem of the origins of Christianity with a minimum of preconceived hypotheses, and refuses to alter an iota of evidence to fit into any theory whatsoever. It forfeits its claim to scientific method the moment it becomes an exercise of ingenuity in framing hypotheses, while being audacious, not to say pugnacious, in maintaining them. Historical criticism at best is not to be reckoned among the exact sciences, for it cannot test its material in any historical laboratory, or by control experiments verify its conclusions. Nevertheless, Biblical criticism has succeeded in clearing up many historical probabilities and bringing our knowledge nearer the original sources of the life of Christ. While, on the one hand, it has left in uncertainty some portions of the Gospel narratives, and in others discerned impressions of later conceptions and traditions, on the other hand, it has found records of Jesus' sayings and acts in the Gospels which stand the searching tests of historical genuineness. It would be foreign to our purpose to discuss any questions of Christian doctrine that recent New Testament studies have reopened, but we accept any possible aid to be derived from this quarter in the further effort to apprehend our immediate problem: viz., the psychological significance of the One Person who as no other has received the name of the Son of man.

It is only a passing aberration of scholarship when the question is raised: Did Jesus ever live? Some basis in historical fact is to be assumed as the ground on which a religion has grown up. Purely from a cloud no fruitful tree ever springs up on the earth. Merely as con-

densation from a nebulous myth no personal power—certainly no such personal power as from the first inspired and led Christianity—could be formed. Its creative spirit proceeds from the Life which was manifested.[1]

It is with no irreverent curiosity that we ask what may be probably known as to the psycho-physiological preparation and ground for the advent and life of Jesus. For us this is another step in the straight way of following on from step to step the revelation of the spiritual significance of personal life; we look for an ultimate interpretation of personality in the highest and fullest realization of it. To us all nature is holy ground, and evolution throughout is revelation.

In two of the Gospels the record is given of the natural descent of Jesus and its preparation for the coming of the Son of man. It is noteworthy that the heredity of Jesus of Nazareth should thus have been recorded as an initial part of the gospel of his life. This record puts Jesus in a line of natural prophecy, and he is to be interpreted as its fulfilment. In doing this those who kept the book of his generation may have wrought for us better than they knew. For them it was a Messianic promise that held them from age to age faithful to their task as they wrote down name after name in that book of generation, and of hope deferred; and withal a Hebrew pride of descent in a chosen line may have preserved through the destructive years these genealogies. But for us in this latest-born scientific age this book of the generations of Jesus has another and distinctive value; for it serves to bring the advent of such a man as Jesus was into deeper harmony with natural law. From afar nature's selective agencies are to be seen preparing the way for the coming of one who should be born to rule

[1] This question, "Did Jesus ever live?" which has lately been exploited by Drews in Germany, has occasioned only a passing ripple; the weight of historical criticism is not behind it.

as a spiritual king among men. A chosen people, a chosen family, the elements and energies of the peculiar people's unbroken and signal history of struggle, faith, and hope were met and blended in his genealogy. Prophets, priests, and kings, and womanhood blessed above others—of such was the heredity of Jesus; such was nature's preparation and fulfilment in his birth. The Son of man, unto whom as he entered upon his work the spirit was given without measure, in the full consciousness of his God and our God as one looking past all the generations that were before him, and up to the divine Fatherhood from which man comes, could say: "Before Abraham was, I am"—"I know whence I came, and whither I go." Not indeed was his advent in sudden outburst of spiritual power that might have consumed in excess of glory the very humanness in which it was to shine as the light of men; but quietly and naturally as one to whom the wisdom of the generations before him had brought their gifts, and whom shepherds worshipped, was Jesus born, and cradled in the love of her who had been chosen and made blessed among women. Naturally the child grew and waxed strong, filled with wisdom; and the grace of God was upon him.

We know little of the physical characters of the man Jesus, except as these may be inferred from his heredity, or became apparent in the manner in which he met with unabated strength the exhaustive labors of his daily life, as well as from the commanding power that was evinced in many instances recorded in the Gospels. Art has drawn from its own imagination the face of the Christ. But when believers think of his form, his look, the tone of his voice, feeling his presence behind the written word, like the disciples of old, they may only say: His face is full of grace and truth. In a prophetic conception of the man of sorrows—a conception born of Israel's humiliation—the Messiah is depicted as one

who hath no form or comeliness; and when we see him there is no beauty in him that we should desire him. So the traditional face of Jesus in art is one of infinite pity rather than of power. He was acquainted with grief and bore our sorrows. Not altogether in such likeness we may well believe did Jesus appear to John, the sinewy Baptist when he looked and saw One coming to him, whom his eye at once singled out from among the multitude, and immediately he bore witness of him, saying: "This is he of whom I said, After me cometh a man who is become before me: for he was before me." Not thus, as one without commanding presence, did those two followers of the strong Baptist from the desert behold Jesus, as without a moment of questioning they left John, and, when he turned and beheld them, they said unto him, Master! Not so, without beauty and form of comeliness that they should desire him, could he have appeared to the multitude as they saw him that day as he stood on the hillside, just above the blue sea of Galilee; and looking up to his face lighted with an inward joy they listened, as he opened his mouth and taught them such blessings as they had never thought of before. Not so, we may be sure, did Peter see him that cruel night as he sat by the fire warming himself in the dimly lighted court; and when he denied him, the Lord turned and looked upon Peter, and that moment's glance, when Peter felt the eye of his Master resting on him, was enough; he went out, and never afterward could he deny his Lord again. Not so, as a form despised and rejected of men did the Roman centurion, commander of the strong and despiser of the weak, behold Jesus on the cross, when with a loud voice he gave himself up to God, and, though not a bone had been broken, he laid down his life and gave up the ghost; and the centurion, standing by, when he saw that victory over death, glorified God and said: "Surely this was a righteous man!"

From the heredity and the surroundings of the early life of Jesus of Nazareth something may be assumed concerning the physical preparation of the Master for the life of spiritual power which he was to live. It was no accident, but a part of the natural perfecting of Jesus for his mighty works that he lived until the maturity of his strength in one of the choice places of the Holy Land. To the traveller, climbing the hillside from the plain of Esdraelon, the village of Nazareth offers its clear air and fountain of pure water, as well as its cooling shade, its trees and flowers, and its hilltop above the dusty highway of the nations, with its broad outlook over the historic battle-field of Israel from the mountains of Gilboa to Mount Carmel, where Elijah had called down fire from heaven. And beyond is the glimmer of the sea on the western horizon. In this spaciousness, purity, and loveliness the child Jesus grew, and at a carpenter's bench he became firm of muscle and skilled of hand. From this training and wholesomeness of his early life he went forth, quick of sight and sound in heart, his body and brain fashioned and attempered to his spirit, to do a work which well might have exhausted the strength of the strongest, in which he endured without moment of weakness, in unbroken mastery of himself and of others unto the end. The brawny fishermen of Galilee, used to nights of struggle with the waves, and trained by years of hardy toil to endurance to the utmost, failed at that last hour on the Mount of Olives, overcome with slumber when they should have watched; but he failed not even in his unshared agony; and in calm consciousness of his kingly power to do God's will he awaited the midnight betrayal and the judgment scene before it was yet dawn.

The consummate organization of the body for the highest spiritual energy of life, the perfected physical preparation and refinement of the Son of man, which the work that he did leads us to assume, is rendered

probably likewise by several incidents in the narratives of his life. Some descriptions of what he did, and the impression that his presence instantly made upon the multitude, as well as upon those who walked in most intimate companionship with him, are thus more readily understood. His disciples indeed tell us nothing of the Master's appearance when he was doing his mighty works. We would like to know how he looked, what light was in his eye, what radiant power in his presence when he said those words, which, when once spoken, it has never since been possible for them to be forgotten among men. But his disciples had come to know him after the spirit so transcendently that they have not dwelt on their recollections of him after the flesh; their personal memories of the Master seem to have been taken up and transfigured in their all-illumining faith in the risen and ascended Lord. Nevertheless, there are some incidental touches in these narratives, some minor incidents, that indicate a rare harmony of outward appearance and attractive presence in the personality of Jesus. It is evident at a glance that the men and women whom he met, and little children, too, were at once drawn toward him; not his own disciples only, but the multitudes felt the strong attraction of what we should call the wonderful personal magnetism of the man. Did ever man speak like this man? It was not only what he said, it was the manner in which he spake with authority, and not as the scribes. The people who listened went away often not comprehending his words, nor understanding the truth hidden in his parables, but *believing in him.* An impression of his vigor and vitality, beyond that of others, is made as we read the brief narrative of a single day's work of Jesus, as Mark has described it in the first chapter of his Gospel. And after that day of exhaustive outgoing from him of vital virtue, we read that he rose while it was yet a great while before dawn,

after a brief time of midnight sleep, and he went forth without the streets of the still slumbering city into a desert place to pray, waiting there for Simon and others to find him, and then at once in the freshness of his marvellous vitality saying to them: "Let us go elsewhere into the next towns, that I may preach there also; for to this end came I forth." So going about doing good, and in many scenes that would have taxed to the utmost the powers of the strongest, he lived and did with all his mind and heart and might the work that God had given him to do. Surely this power of God with man was compassed in no weakling's frame, betrayed no brain overwrought and subject to illusions; this mighty work was wrought with no fevered pulse, nor accomplished in ascetic's wasted body by fastings often rendered faint, and the senses oblivious to the outward world. Nor by excess of inward vigils was his eye blinded to the flowers of the field, nor his ear rendered insensate to the beggar's cry by the wayside. His was no body devitalized by sin, no worldling's softness in kings' palaces, nor even prophet's frame consumed by flaming passion for righteousness. The Son of man had not where to lay his head, but never like Elijah did he lie down under a tree in the wilderness, his nervous energy spent and his courage gone. From that hour when the Baptist pointed him out until the very last when he cried with a loud voice upon the cross, Jesus was always the commanding Son of man, whom the multitude sought to see, from whom the devils fled; the Kingly One whom Pilate feared to deliver to his enemies; of whom his disciples, afterward calling him to remembrance, were sure that they had made no mistake, and had followed no fables, when they made known his power and his presence (II Peter 1 : 16).

Two characteristic features of the Gospels in particular seem to confirm and may in part be interpreted by this view of the natural wholesomeness and physiolog-

ical perfectness of the man Jesus, irrespective of the degree in which one may believe that besides his higher human power some influx of divine energy was manifested in his works. One of these is the account of his ministry of healing.

Just because in respect to some human ills the New Testament gifts of healing seem to come so near the reach at least of exceptional human powers, and yet so far exceed the compass of faith-cures, they have assumed of late a practical interest as well as a religious aspect. They are raising questions of therapeutics as well as of faith. The healing ministry of Jesus lies, as it were, on the border-land between the natural and the supernatural, and both knowledge and faith waver and are perplexed in the effort to comprehend it. Jesus' works of healing may be regarded as wholly miraculous, and as such they are manifestations of a divine power in him which it is difficult for us to bring into any known relations with natural forces. Or they may be regarded as traditional accounts of occurrences that were so exceptional that the people marvelled at them, and which they could not account for by anything known by them of the ordinary experiences of men. This view opens out into the conjecture whether a more extensive healing power might be gained through a more thorough scientific knowledge than we now possess of the deeper and more subtle relations of mind and body. At least it is recognized that some slight degree of healing virtue may be imparted through vitalizing, wholesome personal influence. There are physicians whose very presence, we say, does good like a medicine. We are scientifically compelled, however, to set within fixed and very narrow limits any personal healing power that may be claimed. But it is never safe to lay down an absolute limitation to energies which in our experience are known as yet but in part. It would carry us too far afield to examine the evidence of the

more remarkable cases of faith-cures or mind-healing which are popularly reported. Such instances are rarely subjected to strict laboratory tests, in which they may be verified by control experiments, and the conditional causes carefully determined and analyzed. In time such experimental verification may possibly separate the genuine from the unreal, and extend somewhat further our knowledge of the personal restorative powers of human nature. To some extent we may admit the assumption that a person abounding in life may be life-giving; that a rich and rarely endowed personality, full of natural vitalities and of spiritual sympathies, possessed also of gifts of discernment into the psycho-physical conditions of others, might in some kinds of cases exert a revitalizing personal influence—an influence radiating into the deeper-seated psychic feelings of another's being, and flowing as a revivifying stream along the channels of his exhausted vitalities, causing him to put forth in renewed activity his latent strength. But the reach and possible physical effects of this healing touch of spirit upon spirit is far at present from any exact scientific determination. So far as we have any experience of it, it is not to be confused either in theory or practise with that pseudo-science, which would regard diseases as something to be cured simply by mental denial of their reality. It is vain to identify the physical basis of mind with our idea of it, and to suppose that the physical passes out of existence simply by putting it out of mind. There does not appear to have been an hour of unnatural alienation from nature in the recorded life of the Son of man. He looked upon the fields while teaching the disciples; he withdrew from men for a brief hour, but not from outward nature when he would be with his God in the holiness of the dawn on the mountain. And of the healing ministry of Jesus, who lived so much of his life out of doors, tradition relates not one solitary in-

stance in which he made light of the physical existence of disease, or told the many sick folk who were brought to him that their suffering was not suffering, that evil is not evil, that their leprosy, blindness, impotence and divers diseases were only errors of thought. He denied not that pain is pain when he cried out in his thirst and suffered for us on the cross. The faith that he required is not a belief that this body with its infirmities counts for nothing, but faith in the divine forgiveness of sin, and a will to repent of sin and to trust in God's power to restore the lost. It was not mental illusion, but actual sin which he called men to repent of; bodily afflictions of which they who came to him were very sensibly conscious, were the diseases which he is said to have relieved. Our present concern, however, is not with the miracles of healing as miracles; we are seeking to apprehend further the relation between the physical and the psychical in the light thrown upon it by the personal power and ministry of Christ. The spiritual dynamic of personal life in him came to its highest power. Something of this psychic dynamic seems to have been evinced, we think, in the healing virtue which went forth from him; he himself was aware of it.

The question of the miraculous resolves itself in the last analysis into a question of degrees; as an event believed to have occurred can be related more or less perfectly to the observer's knowledge. At one stage of knowledge an event might seem miraculous, which would be natural when comprehended in its place in a larger experience. An absolute miracle, one that could not be harmonized with perfect knowledge, is unthinkable. Nothing is miraculous to omniscience. A miracle would be inconceivable for us if it were held to destroy any established law or habit of divine procedure in the creation. An absolute miracle, one contradicting our knowledge *within its limits* would be one thing; a relative miracle, one that may disclose a higher power working within the conditions of the existing order, while

transcending any previous knowledge of ours, is a different thing. Omnipotence may make vaster uses of natural forces, within the limitations of their laws, than we can imagine. The real question in an alleged miracle is a question first of the fact, then of the power by means of which it might be accomplished —the latter must be taken into account in judging the credibility of the fact. Consequently the miracles of healing in the Gospel narratives would not be incredible on the supposition of a higher degree of divine power, of which personality may be capable. Long ago St. Augustine discerned this truth, which is not contrary to modern thought, when he wrote: "We say that all miracles (*portenta*) are contrary to nature; but *that*, they are not. For how can that be contrary to nature which takes place by the will of God, seeing the will of the great Creator is the true nature of everything created? No, miracle is not contrary to nature, but only to what we know of nature." —(*De Civitate Dei*, xxi, 8.)

Leaving to one side, therefore, as not necessary to our course of reasoning, questions concerning miracles, we may assume from the narratives in the New Testament that Jesus' ministry of healing manifested some superior psychic power in the realm of the physical—the healing virtue going forth from him acted upon the physical conditions of others, and that in a manner which seemed miraculous to the eye-witnesses. This would be another evidence of the power of the psychical in the realm of the physical. At the source of the early Christian belief in Jesus' mighty works there lies the fact of a new personal dynamic in the life of the world. Nor has such quickening and restorative power been wholly lost from the personal influence of the Christ among men; for it is a present spiritual energy in the lives of men. Possibly more than we have thought a healing virtue in the hearts of men may naturally serve to unify and sustain their physical powers, working thus more effectually for health and happiness than in our diseased heredity and exhausting civilization we may have recognized in our medical phi-

losophy. The effectual prayer of the righteous man may find answer in the healing of the springs of the people's life, and the purifying of the fountains of childhood in Christian homes. Through its cleansing of the physical channels of human life the healing virtue of Christianity has one of the Master's greater works of faith to fulfil. By overcoming sin in the flesh, and allying its power with all wholesome knowledge, and sustaining every renovating science, it may attain a hitherto unrealized efficacy over the disorganizing agencies of disease and render human life for the multitudes of men more pure, healthful, and free; even as in his anticipatory signs of human redemption from evil the Christ bade the Baptist behold the evidence that he had not failed in the work he came from God to do.

The other of the two considerations referred to above concerning the psycho-physiological preparation of the personality of Jesus is the narrative of the virgin birth. The New Testament literature affords very uncertain indications of the manner in which the belief in the virgin birth of Jesus became prevalent among the earlier Christians. Mark is silent concerning it, possibly not finding mention of it in the sources from which he derived his Gospel. Luke in the prefatory chapters of his Gospel draws from other sources the narrative of the nativity, and in two verses (of somewhat doubtful position in the text and of indecisive interpretation) he seems to attribute a supernatural character to the birth of Jesus (Luke 1 : 34–35). Paul, some of whose epistles are more nearly contemporaneous with the lifetime of Jesus than other extant documents, makes no explicit reference to a belief in the virgin birth, and does not rest upon it his faith in the divine Sonship of the Christ. The Gospel of St. John makes no use of this belief in declaring that the Word was made flesh. The belief may have been a reflection of the faith created by the life of Jesus thrown

back upon his nativity. At least it witnesses to the early beginnings of the endeavor of Christian thought, that has continued in every age since to this day, to find answer according to its light, and corresponding with its knowledge, to the question which Jesus himself has put to all the ages since his advent: "What think ye of the Christ?" The naïve naturalness of the narratives of Luke—a simplicity and beauty which we would not have left out of our Bible—indicates how easily conditions of thought prevalent in the apostolic age lent themselves to this explanation of the wonder of Christ's life—a life so divine must have proceeded immediately from the Holy Ghost. And symbolically interpreted as all creeds to be truly apprehended by us in their essential values must be, the words "Born of the Virgin Mary" are still to be repeated as confessing in unison with the apostolic church faith in the incarnate Son of God, although our thought of the Incarnation may resemble Paul's or John's rather than that of the words of the Apostles' Creed in their literal sense.[1]

The important fact for our interpretation of the meaning of personal life is that such a birth could be attributed

[1] One may believe in the reality of the Incarnation without either accepting or denying the account of the miraculous birth of Jesus. For a recent restatement of the doctrine of the Incarnation, see the volume in the *International Theological Library* on the *Doctrine of the Person of Jesus Christ* (pp. 427 *seq.*), by Professor H. R. Mackintosh; also in the *Appendix* his careful presentation of the subject of *Jesus' Birth of a Woman.* He says: "He was the Son of God. But we dare not call virgin birth a *sine qua non* of Sonship" (p. 531). In what is written above, my specific line of reasoning does not permit further statement of my own thought concerning the union of God and man in Christ. I may note a tendency in modern theology to apply to this supreme problem of Christian thought the idea of development, which elsewhere is proving so fruitful in theological thinking; the Incarnation may thus be regarded as a *process* of divine impartation, real at the nativity, and coincident with each stage in the human growth, and receptive consciousness of Jesus—an Incarnation beginning at birth, mediated through the life, and finished in the resurrection and ascension of Jesus. No philosophy, however, of the unique person of Jesus is essential to believing in Jesus himself.

to him because he had lived so divine a life as had been witnessed by many—most divine to those who had been nearest him and knew him best. Among eye-witnesses of his presence he had lived so divinely that it was natural to believe he must have been more than human in the mode of his birth. Indirectly but strikingly this belief has value for our apprehension of the supernal meaning of his person.

So far indeed as concerns the physiological preparation for the psychical power of the Son of man, the narrative of his supernatural conception might have a doubtful value. For if he was human like ourselves, and our nature is to find its full measure in his humanity, then his heredity must have been as human as is ours. Theology has clung to the doctrine of the miraculous birth of Jesus, and the Roman Catholic dogma of the Immaculate Conception of the Virgin has gone still further, in order to escape the suspicion of any imputation of original sin or enduring taint of human nature in the sinless Son of God. But in so doing Christian theology has fallen upon the opposite difficulty of maintaining that in all points he was tempted as we are. Whatever may be thought of this theological teaching and its dilemma (which we mention only that we may pass it by), approaching as we are now seeking to do the person of Jesus from the natural history of personality, we come before him as the One in whom, beginning, from his childhood, man's self-conscious life rose to the supreme manifestation, and when so viewed, we must assume that there was no breach of continuity in his inheritance of our nature. Whether before ever his members were fashioned, as afterward at his baptism, there may have been an exceptional descent of the Spirit, an impartation of the Holy Ghost beyond our power to comprehend, but not beyond the capacity of nature to receive—this may well be matter for speculative thought or for simple faith. But in any case, in whatever manner

he became divinely human in his birth and through the development of his life, he would not have become the man for us he is, unless from his mother's womb he had entered into full inheritance of the powers and virtues, and also the liabilities to temptation of our common human nature; unless among these in him had been met and blended the masculine and the feminine elements of life's rejuvenation and enrichment. Both parents, the father and the mother, give to us of their natures, and the best qualities in each are harmonized in the character of the child that may grow to be fairer and abler than either of those who gave it birth. And surely the life of Jesus showed the union and perfection of both the manly and the womanly of his heredity from a line of kings and from the mother who was blessed among women; for in his personal authority and in his wondrous personal attractiveness, he led strong men to leave all and follow him, and drew the little child from the midst of them to come to him.

We pass now from these observations, such as the historical data suggest, concerning the natural preparation of the mind that was in Jesus; we have next to apprehend the meaning of the personal life as it is lifted up in the Christ, and as it is known in the Christian consciousness. We are reverently to interpret the self-consciousness of Jesus through ours, and again to reinterpret our self-consciousness through him.

Jesus was a historical person, and Jesus has become the Christ of history. With the insight of simple trust the unlearned behold his likeness in the crystal clearness of the Gospels; the scholars search diligently the historical materials of the New Testament times to find, as pearls of great price, some genuine sayings of the Lord. He left no record of his teaching; he committed no words to parchment to be read for generations to come. He

built no city; no foundations of temple of massive stone bearing his inscription are discovered beneath the dust of ages. He achieved no signal victory; raised no triumphal arch to make his name imperishable; a perishable cross of wood, on a hill which tradition cannot distinguish from another, was his only sign. Once only did he write; in a company of scribes and pharisees he stooped down, and with his finger wrote on the ground—what was it that he wrote? It is related only that to a frail woman, sinned against and sinning, left alone in his presence, he said: "Neither do I condemn thee; go and sin no more." His mighty works were wrought in no permanent memorials of his power; simply the water turned into wine was a sign to manifest his glory; only frail bodies, healed of their infirmities, but soon returning to the dust, were the evidences of his indwelling virtue. The one sole tangible, visible thing that he left in remembrance of himself was the broken bread and the cup of communion which he gave to his disciples. Nevertheless of the person of Jesus this wonderful thing remains forever true; though without writing or memorial of his own to make himself known, he is of all men the best known—his name named to every child, his teaching the faith of men of every generation, his example the law of countless lives, his character the ideal of the world, his personal influence, as the centuries come and go, the abiding power of God with men. Others who have taught are known to the few by their ideas; the mind that was in Jesus is known to the many by his spirit in the thoughts of men's hearts. We must go back into the receding past to gain acquaintance with others who once lived lives worthy of remembrance; we know the Christ as one always with us in our lives; we believe in him not only because his disciples beheld his glory, but because his light is shining in our skies. He who was born in Bethlehem goes before us as the man who is to come in the glory of the future.

We do not and cannot separate the Jesus of history from the Christ of to-day. It is not true to the life that was manifested in him when we put the question—Jesus *or* Christ? The historical Jesus has become the potential Christ of history. Jesus is himself the creator of the ideal Christ. Had he not come then in Judea, the Light of the world would not now be shining in men's hearts. The same Jesus who was yesterday, is become the Christ of to-day; he lives in the life of his own. He gathers into one the ideals of men and the hopes of the ages, and by his name these all are known. We mistake no illusive feeling for spiritual reality; we stand on firm law of life and history, as substantial and as unbroken as the law of conservation in nature, when we hold it to be true that Jesus Christ in his life on earth must have been potentially all that he has become kinetically, and is actually and shall continue to be in the life of the world.

The modern critical school is not generally disposed to deny or to minimize the continuous energy of Jesus' personal power. Historical critics who have not hesitated to reduce to the lowest terms the authenticity of the documents that bear witness of him, have nevertheless discovered in his spirit an abiding presence; few would be disposed to dispute this truth concerning him which Wellhausen with profound insight has perceived; Jesus cannot be understood apart from the effects of his coming, and if he is separated from this, justice will not be done to him.[1]

[1] Wellhausen's words are worthy of more full quotation: "The heavenly Messiah now, it is true, overshadowed the earthly Jesus, but his working did not therefore cease. He was not only the King in heaven, but also the first in a succession of spirits on earth. . . . Without this afterworking in the Church, we can indeed form no conception of the religious personality of Jesus. It appears, however, always in the reflection, broken through the medium of the Christian faith. . . . One cannot understand him without his historical working, and if one separates him from that one can scarcely do justice to his importance. Without his death he would not have become historic."—(*Einleitung in die drei ersten Evangelien*, pp. 114–5.)

It is not indispensable to recover in clear and definite delineation the historical figure of Jesus over against his own times in order that we may apprehend the meaning of personal life in his revelation and glorification of it. It is enough to know the mind of Jesus as it was manifested to his disciples, and as it has been ever energizing in the mind of his Church. He is known in Christian experience. How Jesus once lived on earth lies in part disclosed amid the shadows of the receding past; how he lives now and always is known in the inspiration of human life by his spirit. We accept gladly any help from historical studies by means of which we may conceive better the conditions under which he did the work given him to do, and the materials, and limitations also, which the thoughts and ways of men then offered him for his parables and teachings. But the interpretation of personal life in its Christian realization is to be found not only as we look back with the historical scholars to the sources which they recognize of our knowledge of his life, but also as we may behold him in the simple realism of the Gospels and the faith in him of which they bear witness. For in either case we feel, and the heart of the world's life cannot lose, the sense of his presence and mastery. Critically stripped of the legendary, contemplated in the cold light of the most searching historical criticism, or discovered, as nothing else finds us, in the immediate response of our life to his, the personal influence of Jesus has become the dynamic of the ideal in the world, the power of God with man. We may go further and say that recent historical research, whatever it may take from the claims of the New Testament writings, serves to clarify and enhance our apprehension of the significance for us of the person of Christ for our personality because of the very fact that it is not concerned with dogmatic presuppositions concerning the two natures of the Christ of the creeds, while it attempts

to rediscover what in him was most human and real. These studies leave us with an enhanced conception of his unique and superlative person as himself the source of Christianity, and also of his re-creative power over the materials given him in his age with which to do the Father's work.

This view, which must be taken of Jesus in order to account for the origin of Christianity, is enough to raise far above any possible materialistic estimate the worth of all human personality. Biblical and historical criticism, in the hands of its most thorough masters, leaves us in the end neither in a revived rationalism nor in a despiritualized naturalism—neither, that is to say, a dissolution of the rich reality of the inner life into an anæmic system of ideas, nor a crass reduction of the thoughts of men's hearts to states of their cerebral areas. The Christ of historical criticism is the original source of the disciples' faith, the ever-present vitality of his church, and the revelation of the spiritual worth of humanity which he came to save and to glorify. After these more general statements we proceed accordingly to estimate in several chief particulars the value of personal life in the Christian realization of it. Recalling the distinctive elements and factors of self-conscious life which we have examined in the preceding pages, we inquire further—how do these appear in the light of the ideal personality as that is lifted up in Christ?

First, the mind of Jesus reveals the transcendent ideational energy of personal being. We have seen that in the simplest beginnings of intelligence the ideas which the child puts together in its mind cannot be identified as having the same physical character as the blocks which its hands build up; the play of the child's intelligence with every new experience transcends the motions of the muscles of the body. Thought from its first awakening flutters above outward objects, erelong be-

comes capable of sustained reasoning, and in joyous flight of imagination may possess the freedom of the skies. So the child Jesus grew in knowledge and wisdom. Jesus was taught in Mary's home on the hillside of Nazareth as other children are in those early years of infancy, in which so wondrously a human mind born of the spirit in nature comes to itself. Jesus in childhood learned those simple household words which afterward he should fill to the brim with his consciousness of God, his Father and ours, and of men as the children of God. Nature gave to him her language, and from the things that he had seen from his boyhood at Nazareth and by the blue lake of Galilee he could draw his parables of the spirit. In short, the psychology, if one may so speak of the great Teacher, was like that of others, physiological in its groundwork, dependent upon the physical organization for its development, and upon the symbolism of the language of the senses for its expression. Yet the very hesitancy in which our religious sense may shrink from stating thus in plain words the physiological conditions of Jesus' consciousness of indwelling divinity, bears witness to the mind that was in Jesus as not of this world and as transcending its earthly conditions. To nature, in its outward forms, in the midst of which he had been nurtured, the spirit of Jesus went forth as with a higher authority, transforming the world of outward appearances into symbols of a reality fairer and diviner than they seemed, and discerning in its transient forms the thoughts of the Eternal. One need but open the Gospels at almost any page to perceive the mind of the Christ revealing in a new light every familiar thing of which he takes thought. He sees all things over against a divine background. Though his teaching has become blended with traditions, though it has been foreshortened, confused, darkened at times in its transmission through the minds of his disciples, nevertheless, the mind of

Jesus reveals the clear consciousness of spiritual Sonship and a sure sense of divine reality. The thoughts of Jesus shine down upon ours, positive as the stars. His "Verily, verily, I say unto you" speaks to us with the immediate certainty of a mind thinking its thought with God. His answers meet, as from above, questions that arise from the deeps of human life. His words speak with an authority all their own, and not as our philosophies. As an apostle, who had been trained in the school of the scribes and afterward had come to know the Christ after the spirit, once put it: the Son of God, Jesus Christ, was not yea and nay, but in him is yea (II Cor. 1 : 19). He is to this day the yea of the spirit in human thought and history.

The spiritual significance of mind as manifested in Jesus' self-consciousness is brought out more directly by a study of his teachings as these are critically considered in all possible lights. Our present concern with them is not theological, but epistemological; not, that is, with Jesus' doctrine of God and man, nor with his ethical teachings as such, but with the interpretative light which his self-consciousness may throw into our knowledge of ourselves. We must limit ourselves, therefore, by referring to the literature in which these teachings are treated in detail, and selecting a few only of the principal lines of New Testament studies that bear directly on our discussion.

1. Thus, for one example, the ideational power of mind and its transcendence appears in the Christian consciousness of God, of which Jesus' knowledge in himself of the Father is at once the source and the inspiration.

It is sometimes said, as though that were the end of the whole matter, that men have made their own gods. That in a sense is true, and if man could not find a god, he would make one. For he cannot rid himself of all sense of some power greater than himself on which he is ab-

solutely dependent. But this is by no means all; the mental power to create a god itself witnesses to a godlike power of creating. It is a human power, surpassing the animal capacity of limited immediate response to the perceived environment. It is escape of mind from the visible to the invisible, from the actual to the ideal. It is personal response to Him whom having not seen we love. Suppose an animal to have become able to feel as much as this, "This which is felt is feeling of mine"; at that moment it would stand in such awareness of itself at the very threshold of the consciousness of a human child. There indeed all animal life seems to stop short. But suppose it further to be able to say to itself in such dim awareness of being: "I am, and I am not what I see." Then a life capable of conscious individuality would have begun. Suppose further to this were added the power to think, "I am not the world, and the world is not myself, and there is something in which both I and my world exist"; by such affirmation it is become a rational being, breathing thoughtful breath, capable, if such life continues growing, of creating a new world of ideas. Suppose it to reach one degree higher of thoughtful existence, and as expression of its full consciousness of being to say, "I am," and in the same breath to say, "My God." Therewith the height of human being is won, the widest expansion of self-consciousness opened, the horizon of the finite selfhood blends indistinguishably with the infinite beyond. Man has gained such power; in the similitude of his own personal being he can conceive of the God who has made him in his likeness. Thus anthropomorphism is itself evidence of some godlike transcendence of the psychical in the natural.

Some anthropomorphism must cling to all finite thought of the infinite One; for the similitude of our personality limits the concept of divinity. But the immanence of the divine in man's self-consciousness, which is brought

out in the idea of God, is a reality greater than our thought, in which, in the very act of thinking, we have our being. The supreme authentication of the immanence of the divine in the human was given in the self-consciousness of Jesus, and is assured in the Christian consciousness of God, in which his disciples have fellowship with him. For Jesus was not merely as one thinking God's thoughts after him, as Kepler, the astronomer, could say of himself, when after laborious effort he had demonstrated the laws of planetary motion. Jesus was as one thinking God's thoughts *with* God. He could say of himself: "I and my Father are one." Having come to a knowledge in himself of the Father, and its full assurance, Jesus gave his consciousness of God to his disciples, and it has become the faith of his church; it is humanity's most personal and supreme achievement. It was his life with the Father which that disciple who knew him best declared to be the Life that was manifested, and its fellowship with the Father the disciples have with his Son Jesus Christ.

2. Again the spiritual significance of personality shines forth from the Christian consciousness of the kingdom of God. In the mind of Jesus the spiritual realm was the permanent reality—more real in his inner perception of it than the mountains round about Jerusalem. The heavenly was not to him a hope but a presence, and on the horizons of this world-age he saw the signs of the world-age to come.

Consider what is contained in large outlines in the Christian thought of the kingdom of God. There is a natural kingdom of man, which has its foundations deeply laid in the world of life before he came. We must go far back in our natural history to find the elements of the social instincts. The unicellular protozoa became aggregated in colonies of cells. Life from the start has been an untiring process of integration. In the struggle for

existence natural forces must form organic combinations. And might among men is early brought under a vital compulsion to make rights. As personal individuality is realized, force becomes socialized and moralized, obligations corresponding to natural functions are distinguished, personal rights slowly acquired. Society gains form and substance in customs, institutions, laws; a higher principle—a law of personal values—becomes the ruling idea in social evolution. Hence, there appears at the dawn of history the kingdom of man in fulfilment of the kingdom of nature.

Into this kingdom of man Jesus was born—a kingdom then of unrealized promise, disorganized by its struggling forces, demoralized by the power of lawlessness and the lawlessness of power. The kingdom of man had become in Jesus' time the decadent virtue of Rome, and the disappointment of the hope of Israel. Religion itself had failed to hallow power. Yet in human nature the foundations of the kingdom of God remained. Personal society at its worst rests on something of more worth than animal association. The hive of bees, the nest from which the industrious ants go forth to their labor and return in the way they went—marvel of co-operation though these seem—are social attainments far below the level of the life of the early cave-dwellers who might recognize one another as individual families; and the tribe is another order of social organization than the herd. Human society had its groundwork laid deep in nature, but it did not remain underground. It was uplifted into another element of personal fellowship; it is individual freedom realizing itself in social welfare—liberty organized for the common weal. A society of persons is essentially a moral organization. Its prophecy can be fulfilled, its principle realized only as the kingdom of man shall become the kingdom of God. It was far from that when Jesus came preaching its gospel. But he saw it, the

kingdom of man transfigured in his vision of the humanity which is as the kingdom of heaven. No more disfigured by human lusts, no longer possessed by demoniac passions, rent and impotent to save itself; no longer killing its prophets and enthroning its oppressors; not the society into which he had been born; not the dominion of the powers of this world, whom from his boyhood he had seen from the hilltop above Nazareth going and coming with lordly retinue and pomp along the highway of the nations across the plain beneath—this was not the kingdom which he saw was to come on earth. Not the cities by the Sea of Galilee, where Herod's palace and the villas of the greatest among them looked down upon the waters and the fishers' boats toiling amid the waves; while on the other shore were the villages of low-thatched homes and hard-taxed poverty, and in all the region round about were multitudes of the sick, the impotent, and the possessed to be healed, and no one to speak to them a word of blessing—if indeed they were not deemed past cleansing and Israel's God had not forgotten them! Not Jerusalem with its tombs of its prophets and the tables of the money-changers in the temple; not this world of ours still too like that which he saw and pitied while he lived on earth; was Jesus' inner vision of the kingdom of God. But dimly even yet may clearest, happiest Christian faith visualize that which Jesus beheld when the seventy returned with their first reports of what in his name they had done, and Jesus lifted up his eyes and saw Satan fallen as lightning from heaven. All too feebly and vaguely may his church conceive what was in the mind of Jesus when he taught his disciples to pray: "Thy kingdom come; thy will be done on earth as it is in heaven." But ever since he taught his disciples that prayer, his vision has been to Christian faith as a new creation of the earth, and the imperishable hope of a renewed humanity. Jesus' vision of the Son of man coming in his king-

dom, as on the clouds of heaven, with power and great glory, has been from that hour to this, and shall be until he comes, the faith of Christianity in the ultimate hallowing of all power, the inestimable value of man, and the endless possibilities of personal lives, made perfect together in the presence and reign of God over all and in all blessed forever.

Moreover, this possibility, this value, this perfection of humanity, which to us seems so remote from common life and unreal as a far millennial glory, was to Jesus no distant unreality. From the glimpses which the Gospels afford of his inner life it is evident that he lived even in the midst of the sins and sufferings of the people in the felt presence and power of the kingdom of God; as it was said of him, when he was on earth he was the Son of man who is in heaven.[1] The laws of the kingdom were actual to Jesus as were the ways that led up to Jerusalem. The love of God for the world was real as the cross on which he was to be crucified. Its triumph he saw as already won, when, as he was about to die, he spake to the disciples of the sign of his coming and the end of the world. Such power to realize the future as the present, to behold with inner clearness and certainty what God alone knows from eternity as present reality —such vision of the kingdom of heaven is the greatest achievement of the spirit which is in man. Flesh and blood cannot bring this forth. When Jesus taught his disciples, and all the generations since, to pray, "Our Father who art in heaven, hallowed be thy name; thy kingdom come; thy will be done on earth as it is in heaven"—that prayer was itself a great act, a spiritual deed, one of Jesus' mighty works. The Lord's Prayer is a spiritual power in the world. Among the forces that exalt life and are making the history of civilization, its

[1] John 3 : 13. This may be a later gloss, but it reflects the impression of Jesus which primitive faith had received.

energy is incalculable. The Lord's Prayer on the lips of men is itself evidence of the spiritual nature of the personal life. It is fellowship in thought and purpose with God.

In recent literature of the New Testament there has been a prevalent tendency to emphasize the eschatological teaching of Jesus, to regard his words concerning the last things as the key to his Messianic mission. It is held that the Lord was conscious of himself as the Messiah, but the time for his Messianic work was not come. This, it is said, was the secret of his sufferings. He knew that the kingdom of God could come on earth only after his death; he must depart in order that he might come again in the power and glory of the Son of man. The kingdom of God, as he preached it, lay principally in the future, and wholly in the domain of the miraculous. This view has been carried to the extreme of regarding the future and supernatural coming of the kingdom as the secret and burden of Jesus' whole ministry. He lived to prepare the kingdom, to announce its coming; he should himself be the Messiah when he should come again to inaugurate the kingdom. A more sober presentation of this view is contained in these words of Canon Sanday: "I doubt if we have realized—I am sure that I myself until lately had not adequately realized—how far the centre of gravity (so to speak) of our Lord's ministry and mission, even as they might have been seen and followed by a contemporary, lay beyond the grave, I doubt if we have realized to what an extent he conceived of the kingdom of heaven, that central term in his teaching, as essentially future and essentially supernatural." (*The Life of Christ in Recent Research*, p. 121.) Two factors are recognized as entering into Jesus' conception of his mission. One was the prevalent apocalyptic expectation concerning the preaching of the Messiah; the other was the spiritual power of Jesus himself, "by virtue of which through an inward necessity of his being he knew himself to be the Messiah, the Son of the Father." In the preaching of Jesus these two are blended; to him the kingdom was both present in his own Messianic power, and yet future, for this world-age must pass away before it can come. "Only a paradoxical formula can

cover the actual historical facts. And that must run thus: *The future salvation has become present, and yet has not ceased to be future.*" (Kaftan, *Jesus and Paulus*, p. 23. Cited by Sanday, *op. cit.*, p. 116.)

The last twenty years of biblical research confirm the belief that there are contained in the Gospels at least two original sources in which contemporary accounts of the words and acts of Jesus have survived; and as we look, and look again, amid the shifting clouds of a far-off history we behold a form distinctly outlined in its solitary and commanding features, luminous in its own spirituality, against the background of his age; we see—Jesus himself!

Secondly, another element of personality is supremely manifested in the will of Christ. Whatever else may be left in obscurity, historical criticism casts no shadow of doubt over the unconquerable energy of Jesus' will to do God's will, and the Christian will of life has become a dominant force in humanity. From Luke's narrative it appears that this higher will of life was early felt by Jesus as a superior inward compulsion to which he must render obedience. When the child Jesus was twelve years old he said to his parents: "Wist ye not that I must be about my Father's business?" When he was about thirty years of age this higher will was realized in his instantaneous and complete self-control, when in the wilderness the whole power of the temptation of the world was concentrated against him. The higher will had grown and become firm in a single purpose; his commanding character, now sure of itself and immovable, resisted successive temptations, as a cliff of rock tosses back the waves that break in their utmost reach at its foot. Henceforth, from his baptism to his cross, the will of God is his will. Jesus' determination to do God's will, as one tremendous passion, fusing all elements of his being in a

single and flawless purpose, is his obedience unto death and the victory of his life over death. It was this felt presence and power of the will of God in him that led disciples, when he called, to leave all and follow him; that sent his enemies away silenced and hating him the more. The energy of the will of God in him forced evil spirits to come out of men who had lost all power to keep their own bodies in subjection, and it held his disciples true to him to the end. From the deeps of Jesus' consciousness came forth that supernal assertion of his life, serene as it was mighty: "I have power to lay it down, and I have power to take it again." For him death was no surrender of the will to live; it was obedience to the higher will that he should overcome death and live again.

Thirdly, an aspect of personality which is superlatively revealed in Jesus is the element of feeling. In him the affective character of human nature appears in its purity and at its best.

In a preceding chapter we have noticed the physical relations and the psychological functions of feeling in our thinking and willing. It was held that feeling is not to be dissociated from the unity of these elements of the personal life, and that it enters consequently into our capacity of coming into direct contact with outward reality. In other words, the affective side of human nature, throughout its entire range is to be taken into account in any theory of knowledge. From our point of view of personal life as energy, feeling is part and moment of the whole process, the total movement of personal life. As such it is not to be neglected as a factor in our cognitive power—it is in its way a means of knowing. Only from a static conception, not from a dynamic view of self-consciousness, can feeling be regarded as a purely subjective state, without value as a means of touching the truth of things.

Here an evident distinction is to be admitted between

the feelings that are purely physical in their origin and objects and the personal feeling, which may pervade as an atmosphere the whole field of consciousness, or the inner sense that may come and go, and yet abide after all reasonings as a consciousness of real value or meaning of our life. The former more distinctly bodily feelings may be the upper limit of animal sense-perception, as they mark the threshold of human self-consciousness; the latter may be the beginnings of spiritual insight and conditions of higher intuitions, by means of which we may become aware, though vaguely and dimly at first, of the outlying realm of the supersensible and the eternal. Here, likewise, our moral sense of values and the religious feeling of absolute dependence may be indications of our personal relations to realities, intimations of our living in touch with things that are not seen and temporal. They may be, then, more than purely subjective states, an afterglow of our own ideas, or reflections of our own consciousness back upon itself; in their source and in their constancy they are the subject acted upon objectively to itself, and reacting upon its awareness of itself as so affected. They gain moral evidence and force as they meet the pragmatic test of truth; as they lead to better adaptations of the self to the felt environment of an objectively apprehended realm of values and ends. In a word, the realism of the moral and religious feeling is a fact of experience, having validity as an essential element in the consciousness of the self as living and acting in the presence of reality. Otherwise the conscious sense of the environment in which we live and have our being throughout the entire extent of it, all round, would be an illusion, the whole relation of subject to object be lost, and nothing have meaning for us.

Modern psychology of the unconscious has thrown the whole circumference of consciousness open to influences from beyond consciousness. In some experi-

ments, for instance, it was found that "shadow lines thrown at certain angles, but too faint to be consciously discriminated, influenced the judgment of lengths of other lines. . . . In this case the feeling-background, perhaps in part above and perhaps in part below the threshold, seems more delicately adjusted to environment than the cognitive rational factor."[1] If thus feeling-influences may enter cognitively from beneath the limit of mental recognition, and blend with the rational judgments of the sensational world, it is likewise comprehensible that influences from the super-conscious, from the realm of spiritual energies, may be received and become elements of the moral judgments and the religious values of the personal life. We dwell not in human isolation from reality around and above us, encompassing us on every side; more finely than we know we may by nature be attuned to influences of the universe far and near, and made capable of vibrating in responsive feeling and ideas to influences which from all sides, the seen and the unseen, may quicken our self-consciousness. Hence come impressions, surprises of thought, ideas that seem to spring up of themselves within us, thoughts never thought of before, as well as those more exceptional inner experiences, rare inspirations, sudden upliftings of spirit, moments of illumination, or the mystic's vision of God. And these, too, might not seem incredible, nothing unnatural, if we knew metaphysically what a world of energies, what an omnipresence of the spiritual is our personal environment; even as now we know in part the world of physical forces always acting upon us.

Schleiermacher in his *Reden ueber Religion* found the lowly origin of religion in the feeling of absolute dependence. Since then the function of the religious feeling in relation to the

[1] Pratt, J. B., *Psychology of Religious Belief*, p. 20, and references to Jastrow and Strutton.

knowledge of reality has been much discussed. That it has some function should be acknowledged. The older writers have considered it mainly from the philosophical side; now the values of religious feeling are to be reconsidered in relation to the psychology rather than any preformed philosophy of religion. The rôle of feeling in general in its relation to cognition is to be studied as a psychological experience before the validity of the religious feeling as a source of knowledge of God can be determined. The inseparableness of feeling and idea may be affirmed against a purely logical rationalism. "Intuition without feeling, and feeling without intuition are both nothing." Schleiermacher came close to the centre of the question when he said: "That first mysterious moment, which occurs in every sensible perception, before intuition and feeling separate, and where sense and its object have become one, is indescribable." (*Reden*, pp. 64, 73.) Compare Baron von Hügel (*Eternal Life*, p. 105), whose exposition of mysticism and its rational evaluation is both profound and illuminative. An attempt to bring out the validity of the moral and religious feeling as an element in knowing was made in an early book of mine on *The Religious Feeling*, especially as a corrective of the unconscious rationalism of the then prevalent New England theology. A recent acute and thorough discussion of the relation of feeling and idea and a vindication of the underlying truth in mysticism is to be found in Hocking's volume, *The Meaning of God in Human Experience*.

Feeling is not only at the perennial source of personal life, it pervades also the whole stream of life. It is always an element of thinking, however one's processes of thought may be filtrated from all emotional elements and rendered pure thinking. The most limpid thought is still aerated, as it were, by feeling. An atmosphere of feeling encompasses and pervades all rational activities. The personal tone affects our judgments; even in scientific observations the personal error must be reduced to its lowest, but never quite vanishing, term. Nor is this all. Feeling is the forerunner of ideas; feeling hardly rises before it breaks into thought. An aim and end of

feeling is attained in clear ideas, assured of themselves. Even the lowest feelings, most allied to the physical in their original impulses, minister to the higher mental growth; they might be regarded as the antennæ of the mental organism by means of which the mind seeks until it finds the nourishment fitted for its sustenance and growth. Only in analytic introspection are the primal elements of our self-consciousness to be held apart; they coalesce and co-operate in our daily living. The stream of personal life is one stream, all its elements and energies are commingled in the wave of consciousness breaking at any moment on its environing shore. Moreover, the fact should not be overlooked that the action and reaction of the life of feeling and thought are mutual, and that ideas are ended, as they may have begun, in feeling. The idea is formative of feeling, as the feeling is originative of the idea. It were a false philosophy to put asunder what nature has thus joined together. It may be possible from a static point of view, but not from a dynamic, to regard feeling as purely subjective, a mere eddying back into itself of consciousness. A naturalistic psychology is untrue to human experience when it treats either a feeling or an idea as a mere epiphenomenon of consciousness.

There is one pragmatic test that may be applied alike in determining the validity of feelings and of ideas: viz., that of constancy. It was a profoundly suggestive remark of Nitsch, that the religious consciousness perfects and justifies itself, when, "in the immediate life of the spirit a process is established through which the contents of the original feeling of God (Gottesgefühl) objectifies itself in a *constant* manner."[1] This meaning may be made obvious by reference to our perceptions of external things. Thus every time we look at any given object, as a star, the same image regularly repeats itself to the eye. When-

[1] *System der Christ-Lehre*, s. 25.

ever we feel resistance to the sense of touch, as when we lay our hand upon a table, the same conception of an external object is formed in the mind. The process from our sensations to our perceptions takes place *in a constant manner*. If it should fail to do so, we should distrust at once our senses. We should have no valid knowledge of an external world, were not the relations between our sensations and our ideas of things generally uniform and constant. Similarly is it with regard to spiritual ideas or our belief in a supersensible reality. If the fundamental and universal moral and religious feelings of mankind were only occasional, if the ideas that arise from the sense of absolute dependence upon a power not ourselves were but a religious occasionalism—the capricious conceptions of a few,—then they might be looked upon as hallucinations, and religion itself as but a dream of the soul to which no reality corresponds. But, on the contrary, the process from the natural religious feeling to ideas of God is a constant one. The so-called intuitive ideas are *constants* of our primal feeling of existence. Religion is not a mental occasionalism, but a rational constant of human experience. As an apostle said, men "feel after Him and find Him."[1]

It is a striking fact that Jesus is more immediately and better known by us in his life of feeling than by his acts. His miracles may be accepted on the testimony of others who lived long ago and were eye-witnesses of his works; his feeling we know in our own most intimate experience. The imitation of Christ consists not only in seeking to think as Christ thought, and to do as he in our place might do, but more inwardly and vitally to feel as he felt—as he would have us feel in our thoughts of life and death, and toward all the changing circumstances of life. Humblest believer, as well as learned

[1] This point is emphasized in my *Religious Feeling*, pp. 118 *seq.*

scholar, reading in simplicity of heart these Gospels, cannot fail to understand how Jesus felt, and would have his disciples feel, whatever we may think. His feeling is the very atmosphere of the Gospels; in it the disciples drew vital breath, and we, too, may live daily renewed in spirit and in peace of heart. We may not understand alike his teaching, as the disciples did not at once comprehend the simple meaning of his parables, but instinctively and with one consent the world recognizes and takes to heart something said or done which is felt to be most Christian. The promise to Mary is ever fulfilled among us, that by him the thoughts of many hearts shall be revealed. Jesus' feeling toward God and man, in view of life and death and the world to come, is an abiding personal influence. It enters into and pervades our human feeling, filling it to the full, purifying and transmuting it into something richer and diviner; even as in that first miracle which he wrought at Cana of Galilee for Mary his Mother's sake, the disciples found the water changed into wine. So also our worst feeling may be changed into our best, if his spirit manifests his transforming glory in it.

His outward life, his daily example—how little is related of it; how much we would like to know has been left untold—how much more might have been told us, if only some of those books, of which St. John speaks, had been written concerning many other things which Jesus did! Perhaps some higher wisdom may have cleared away all these lesser circumstances of his ministry that above all the things that he did his Person might stand forth in its own commanding character, for all the passing generations to behold its glory. From our most human feelings, our deepest, happiest, and best, it is not hidden how he felt as he looked upon outward nature, or had compassion on the multitude, or met the tempter alone in the solitude of the wilderness, or bore our sin and

drained to the dregs the cup of man's suffering, or rejoiced in spirit as even in some slight beginnings of good works done in his name he beheld Satan fallen as lightning from heaven. We may learn something of what he meant when he said, "My joy," "My peace," as he was about to go to his God and our God, and would not leave his disciples comfortless. This is the one sure gospel of his life, this the sunny openness and serene assurance of Jesus' divine humanity to those who have eyes to see and hearts to understand.

Would we discern, then, the final significance of the personal life? Would we measure the distance that has been traversed from its lowly origins, through its age-long nurture at nature's breast, to the hour of its upleaping into man's consciousness of himself and his God? Put, then, the beginnings in contrast with the end—that star-dust concentrated in our sun, that "mind-dust," as the earliest sparklings of intelligence in nature have been called, in contrast with the final, luminous Christ-consciousness of God; put that least living cell beneath the eye of the Son of man who knows that nothing falls to the ground without the Father's notice; consider the way of life, what it means, from *that* to him in his thought reaching beyond the stars; think again and again, what does it all mean—the distance passed, the end reached in the fulness of time in him, the Christ in his transcendent consciousness of God? What but this: the revelation of the mystery of the worlds, the manifestation of the secret of the Spirit hid from the beginning, the personal life in the likeness of him for whom and by whom are all things? What but this beginning and consummation: our God is one God—nature is one revelation of the Spirit—we are made partakers of the divine nature—in the beginning was the Word, and the Word was made flesh? We have seen his glory, glory as of the only begotten of the Father, full of grace and truth.

CHAPTER VIII

THE CREATIVE SPIRIT OF CHRISTIANITY

The writer of the book of Acts speaks of a former narrative "concerning all that Jesus began both to do and to teach, until the day in which he was received up," as though his personal teaching and working were not ended with his life on earth, and his manifestation of the word of life, which the disciples had beheld, was to be continued in an unbroken fellowship with him. The Christ, then, is to be known, and his revelation of the meaning of the personal life comprehended, not alone from what may be learned of him in the Gospels, but further in the consciousness of those who receive his spirit and by the greater works of faith which from age to age shall be done in his name. Hence to know ourselves as we may be known, we must enter into the Christian experience of life. Psychology as a science fails to exhaust all resources, and leaves its task unfinished, if it is content to stop with the natural mind, and does not explore the depths, and estimate at their true value the riches of the consciousness of life which the Christ has created and in which his spirit dwells. To some extent in the preceding chapter we have sought to know the historical Christ in the light of the world's continued experience of Christ; there are some further aspects of our knowledge of our own lives through Christ which remain more distinctly to be contemplated. A continuous revelation of both man and God runs on and on in the work of the creative spirit of Christianity.

We have previously referred to the fact that personality possesses a power of "creative synthesis," and is

characterized by a law of increase of psychical energy. This increase of spiritual re-creative power, which is a distinctive psychological character, is pre-eminently witnessed in the life of the Christian man and the changed world of the Christian society. Both the new man and the new society are the spiritual creation of Christ. The Christian society becomes the fit environment of the Christian man. He realizes his new life in it, and the same creative spirit is manifest in both. Hence theology becomes unreal if it is unhistorical; it is devitalized and untrue to his words, which are spirit and life, if it hardens into a completed logical system of doctrine which is no longer kept open and in thoughtful touch with the progressive revelation of the spirit in and through the mind of the church from age to age. The Christian consciousness is the continued creation of the Spirit of Christ. It is the collective mind of his disciples, enlarged by the history of Christian thought, enriched with the experience of believers from every age, and illumined with the knowledge of God which increases with the years. It is knowing in part, and hence it can never be a closed volume, a completed theology, an end of inquiry. It is at once an inheritance and trust, yet a faith not to be kept in timid stewardship, as a talent hid in the earth, but to be put at interest in the new thought of each generation, that as knowledge grows truth may receive its own with interest. The Christian consciousness was begun in the fellowship of the life among those first disciples who went up into the upper chamber, where they were abiding; and then with that earliest company of believers who continued steadfastly in the apostles' teaching and fellowship, in the breaking of bread and the prayers. It was begun then, but it was not finished. It has been and is a living and growing faith.

Nothing that we know is as yet a finished creation, neither the earth, nor star, nor the heart of man. All

is in motion, all in process of revelation—the material worlds, the march of events, the life of the soul. We live in the progressive realization of a realm of moral ends and values, and, as we trust, the providential development of a supreme and universal good. To regard either the world around us or the Christian consciousness within us as static and completed would throw our best efforts to gain a theodicy into utter bankruptcy. Faith itself might fail to justify God's ways to men if we should imagine either physical or spiritual development to be brought to a sudden stop, just as things are now, and all to stand motionless for final judgment. The leaven of truth has not yet leavened the whole lump of theology. Too many things in our beliefs wait for their season of ripening. We trust the patience of Providence, and wait on the Lord. Not till all things shall be ready will the last trump sound—that last, most joyous triumphal call that, I think, the old world shall ever hear. Only because it is an unfinished world is it a world of hope—a world in the midst of the sin and the tragedy of which reason may make its great venture of faith in God, and human hearts may dare to love. We assume, then, as among the necessary postulates of faith that it is to continue to live through growth, and that the mind of the church, of the Christian society as one whole, will repeatedly find new adaptations to increasing knowledge, if it is to be in truth the manifestation of the energy of the mind of Christ in the thoughts of men.

We are considering thus what the Christian consciousness and its development may be understood to be, because we desire to inquire what light it may afford as we would gain a rational estimate of the meaning of life for us. For this purpose we will take our start from the so-called pluralistic point of view. There are many minds, it may be said, and these most diverse in their beliefs; only abstractly or ideally can it be said that

the mind of the church is one. It is true indeed that here we cannot start from the one and reason downward to comprehend in one the many; we must be pluralists to begin with, taking account of the beliefs of the many; or else an absolute unity of Christian consciousness would be but an abstraction, empty of reality and void of power. It is a fundamental fallacy alike of dogmatism and of individual independence of belief (singleism) that both start from the idea of truth as an absolute doctrine to be maintained either in one of our logical systems as a completed whole or, in the other case, as an absolute individual conviction to be held in isolation from other human experience. The truth itself is absolute, but it does not cease to be a truth though we may know it only partially in relation to all other truth. Revelation is no less divine if it is given to men relatively to their limitations of knowledge and the degree of their power to see truths largely and as a whole. We may well conceive that divine revelation is given to men naturally as the light is for many eyes to see, thrown over broad spaces, broken in many creeds, in divers reflections, yet the one revelation, the true light that lighteth every man coming into the world. But how, then, if this indeed be so, may we know what is the mind of Christ among so many minds? What is the consciousness of life which the Christ creates? The task requires both humility and charity, as well as trust in truth though it be but partially revealed. But the method of such learning is simple as it is vital, and the assurance of such faith is not impossible. We are first to find whatever is given as real and truest in the Christian consciousness of individuals, and then the answer to the question just raised is to be discovered in the whole social religious experience in and through which each individual gains his personal creed as his part and share in the general Christian consciousness of his age. We

are to bear in mind the principle that the individual mind and the social religious consciousness are not to be put asunder in a perfectly natural Christian development.

The child in a Christian home is born into the Christian consciousness as his spiritual environment. It is the light in which the child awakens to self-consciousness; it is the atmosphere in which its mental life begins to act. Baptism is at once a recognition of this fact that the child belongs from birth to the kingdom of heaven, and also the sign and seal of its right and part in the Christian inheritance. The Christian child may consequently be said to be elected in the sense that from birth it has been selected to find its life opening in adaptation to the Christian environment. It has this advantage from the start. But the personal life can never fall wholly under a law of natural selection. Its election involves indeed natural aptitudes, themselves the resultants of its heredity, and also a favorable environment to which its instincts are fitted, together with happy influences and opportunities for its growth after the spirit as a child of God. But the law of the development of the personal life, nevertheless, is a law of liberty; personal individuality is always a moral contingency in the world, and every child is born to find its own life and to determine its own character. It is not natural for the person born and coming to maturity in the midst of the Christian environment to fall wholly out of it. The Christian consciousness, though lost, may still remain in his subconsciousness, from which ideas and motives may at times return with compelling force over his conduct. Even though he may be led to discard his early teachings and to adopt an alien creed, the habit of Christian thought will still cling to him and the ethical tone and vigor of it remain his chief good. Nevertheless, a personal creed, even though formed in a distinctive

Christian environment, is a personal achievement. Otherwise it would not be real, not fully and truly personal. An opinion may come as the conclusion of an argument; a conviction is a summation of experience. And personal life is experienced in the social environment.

Mr. James in his *Varieties of Religious Experience* has gathered together a large number of abnormal religious experiences, and searched in them for things not usually thought of in current physiological psychologies. From the pathology of mind he would learn more of the influences that may play upon mind from beneath the threshold of consciousness. Spiritual pathology may thus demonstrate, when thoroughly investigated, unwonted activities of familiar factors of personal life, and require an extension of psychology out into the spiritual border-land around our ordinary experience. In this direction psychical research may bring some reinforcement to belief against the denial of any distinctively religious nature or further possibilities of spiritual being; but in the normal consciousness of the Christian coming to himself in a genial religious atmosphere is to be found the evidence of things unseen; the character that he acquires through working out with others his sanest and best life, abounding in its affections, firm in its purposes, and rich in its memories, will become to him the substance of things hoped for.

Having thus described in general the Christian consciousness, we may now point out more specifically some of the chief characters which have significance for the interpretation of our life. They are signs of the creative spirit of Christ within the personal world.

1. Christian experience is characterized by a new sense of energy. In instances of sudden conversion, there is a new note of power. It has been described as "the expulsive power of a new affection." It is felt as a signal reinforcement of the will. It becomes a consciousness

of power to pass unscathed through fierce temptations. It is evinced in a self-control impossible before. It is the formation of a new habit of will, as well as the opening of a new world of ideas, and the unloosing of hidden springs of feeling. Morally the new man in Christ Jesus, as he is rightly named, may become practically immune to temptations to which he is exposed, to which before he was too liable. Such spiritual immunity is a fact of religious experience as real as physical immunity from the infection of a noxious environment; partial indeed in many cases it may be, and not always lifelong; but often it has proved to be the acquisition of a remarkable and permanent immunity from temptation to which one had been subject. In other instances of Christian experience no sudden influx of spiritual energy is to be observed; but there has been a deepening of motive, an enlargement of purpose, a strengthening of convictions, and clarifying of ideals which indicate a coming without observation of the spirit that gives life more abundantly. But whether so revolutionary as to be matter of common observation or becoming so quietly a second nature that it is apparent only in time as a growth and ripening of Christian character, the creative influence of Christ has been a renewing and transforming energy, working effectually in the experience of an innumerable company of his followers. One might as well deny the actuality of electricity in the atmosphere as question the presence of this spiritual energy throughout the broad experience of Christianized humanity; experimental psychology has to deal with the fact of it, as it has to do with any other elements given in consciousness. It exists as actually as any transformation of sensation into perception, and it becomes dominant as no physical factor can be over the whole field of self-consciousness.

This new influx of spiritual energy is conceivable in accordance with the law of psychical energy which Wundt,

and others, as Mr. James, have observed as a distinctive principle of free personal activity.[1] It is an inflowing of spiritual energy into the very source and fountain of personal life. It manifests itself in increased personal vitality. With a new intensity of being the man unconsciously become Christian says with the apostle: "It is no longer I that live, but Christ liveth in me." So Jesus himself said: "I came that they may have life, and may have it abundantly." Christian experience is a new spiritual vitalism.

2. In Christian experience one learns a right regard for self. Every person is at once both subject and object to himself. Introspectively we may make ourselves the object of our own consciousness, beholding ourselves, as it were, in a mirror, though often darkly. This objective self is the formed self in distinction from the subjective, which is the formative self. It is this objectified self which may properly be esteemed in what we speak of as self-respect. This is the self as object of regard which is put in the second commandment on the same line as another's self: Thou shalt love thy neighbor as thyself. The one is the measure of the other because both alike are moral persons in a realm of ends. Mr. Ward has rightly stated this relative objectivity of moral self-regard in these words: "The self that I love, that is the self that I know, is *my* self holding intercourse, having reciprocal relations, with a community of *other* selves, and with an environment to an indefinite extent resolvable into selves."[2] This, however, leads us to consider more particularly some other aspects of the personal Christian consciousness, which are involved in what has been just observed.

[1] "The amount of possible consciousness seems to be governed by no law analogous to that of the so-called conservation of energy in the natural world. When one man wakes up, or one is born, another does not have to go to sleep, or die, in order to keep the consciousness of the universe a constant quantity."—(*Human Immortality*, p. 41.)

[2] *Realm of Ends*, p. 343.

3. As a result of the energizing of the spirit in Christian experience there springs up a new ideal of the worth of life and its ultimate good. When Jesus said of old to the disciples, "Ye shall be perfect even as your Father in heaven is perfect," he bade them lift up their hearts to an ideal of themselves seemingly beyond possibility of human attainment. His word, spoken even to the multitude who listened astonished, may be read as a promise as well as a commandment. It is the ideal of the consummate good of the finite person as perfect after its kind as is the perfection of the Father. Ultimate perfect realization of the personal life has become the ideal illumining the hope of the Christian. The ideal is a formative factor in the Christian mind, as actual as is the energy of light in the vitality of the body. This religious psychology cannot be written in terms of physiology. The ideal created by Christ is immanent and potential in religious experience; the spiritual man knows himself as living after the spirit, and by the same spirit seeking to walk. The influence of this ideal is evinced through a progressive attainment of the higher ends of life. Its effectual working is the evolution of the Christ-like character. Attaining, and walking by the same rule already attained, not as already having been made perfect, yet pressing on to apprehend that for which one is already apprehended—such henceforth is the natural course of the new life that Christ has created. Ever above himself rises the better self to be apprehended; ever also the seeking is a finding; ever the ideal self is the same self as the self now striving and conscious of imperfection, yet that self as it shall be, as it is in God's thought of it as made perfect in Christ.

4. Moreover, the Christian consciousness is a sense of reconciliation with life. This is no mere negative resignation; it is a positive harmony of the self and its world. It involves a sense of the forgiveness of sin, and an inward assurance of final victory over it.

When it was reported one morning to Carlyle that Margaret Fuller d'Ossoli had made up her mind to be reconciled to the universe, that grim philosopher replied: "She had better be!" But how to be reconciled with the world around one, is too often the hard problem of a human life. Nature seems to tolerate our existence for a little time, and it is soon over with us. Its forces are armed against us, and our health and happiness is but a brief truce before the last fight for it, which is foredoomed to defeat. The least of the lowest living things may poison our life at its springs, torment us with fevers, fill consciousness with pain, defy our skill to cast them forth, and win final triumph over all our science. Nor does the human world—the very environment that should be adaptation most friendly to us—fit itself happily always to our personal needs; too often it becomes heedless to the cry of distress, pitiless of suffering, while the lives of great numbers are a hard struggle for the right to live. It is needless to dwell on the contradictions of the good by the evil; along every way of life lurk the destroyers of its values, and, instead of finding themselves dwelling secure in a realm of ends, the peoples of the earth wander in a world of confusions and ceaseless strife. Hence, philosophy finds a facile descent into pessimism, and faith, having done all, is called to stand, and face a world in arms.

All the more striking, therefore, appears there conciliation with life of the person who has gained power to think and to feel in the spirit of Christianity. His is no vain compromise of self with his circumstances, no mere truce with evils that lie in wait for him, no false peace at any price, nor final surrender even in death to the last enemy. His is a deep, thorough, and abiding reconciliation with life, a peace which nothing in the world around him may take away. For it is first of all and above all oneness of the spirit within him with the Spirit

which is in all and over all—even God blessed forever. From that central, immanent oneness of the personal life with the divine there proceeds a sense of unity with nature and humanity, with all worlds and intelligences, and with himself also in the harmony of his purposes and desires with the ends of all other personal beings in earth or heaven in the pursuit of the highest moral good. This reconciliation, and the abiding peace of it, appears often most signally in lives where the strife has been hardest, where the immediate environment has been the most hostile, where sufferings have been intense and sorrows most desolating. We have received the witness of this superior spirit in countless examples of Christian fortitude and good cheer, and we believe because we have been eye-witnesses of it. We may have seen it in some faces, still present and radiant in our memories, though they have long since passed into that spiritual transcendence which is a glory too pure for us to see and live.

This joy and peace of the personal life in harmony with God and his world was most divinely known in the inner consciousness of him whom prophets foretold as one who should bear our griefs and carry our sorrows, the one whose face is depicted over the altars of sacrifice to this day as a man of sorrows and acquainted with grief. It was he, the suffering Messiah, who had fathomed to its deepest depths the awful mystery of human woe, who came from the garden, which the sin of the world had made his Gethsemane, to bear our iniquities on the cross; it was he who could leave with his disciples these words: "My joy," "My peace." He would give to his chosen friends his glory, glory which he had with the Father before the world was. Not here and now for us is the irreconcilableness of the world and the spirit to be finally abolished. "Sometimes," said brave Martin Luther, "I believe, and sometimes I do not." But this dualism of good and evil which runs through history and is known in the

inner conflict of every life, has been once for all overcome. God is God over all, blessed forever, and this we know right well, for in the Christ on this earth was the peace of God which passeth understanding.

The progress of our thought, starting as we did from the religious experience of the many, has already carried us beyond a purely individual standpoint, and from the concurrence of the many Christian experiences we gain the broader conception of the one Christian consciousness—the truly catholic mind of the church. But, as we enter the field of historic Christianity, do we not find paths of thought everywhere crossing one another, and nowhere authoritative signs to direct us in the one true way? On many sides theological speculations will invite us, while long-established dogmas will stand in the way of adventurous inquiries. How, then, is catholicity to be anything more than a name? How are we to make real with the phrase, the mind of the Christ in the mind of the church?

It is to be noted at once that the mind of Christ is not something for us to make, but to *find* in the mind of the church from age to age. It is something which our theologies cannot construct in their passing systems; it is the truth realizing itself in the progressive revelation of the spirit of Christ until he shall come. So real is the teaching of the spirit that there is apparent even amid all diversities of doctrines a common recognition of some things as essentially Christian. Indeed it might be said that it is not so much in what men have persuaded themselves to believe, but what for Christ's sake they cannot help believing, that the mind of Christ is made known among his disciples. There is, we are assured, one spirit; and the working of one and the selfsame spirit is always present, and its continuity is not broken in the development from age to age of the faith of the church. No church or creed has all of it, or may put

limits to it; but something of it is in all churches and creeds, and catholicity is the faith once delivered, and still being delivered, to the church.

This valuation of the Christian consciousness, it will be noticed, puts us into a different attitude toward historical and institutional religion from that assumed by the individualist—the position, as it might be called, of theological solipsism. For we recognize a principle of social solidarity in thinking and believing; not to regard it is to neglect a natural means of coming to a knowledge of the truth. Such principle, however, of common reason is not necessarily inhibitive of individual variations or of the acquisition of specific differences in religious thinking and feeling, as the process of natural selection is not a reduction of natural life to uniformity. But an independence of thought, unrelated to the common mental environment, would prove a fruitless intelligence. It may be a sport, so called, of mental nature rather than a variation fitted to survive. A certain law of continuity in the development of Christian doctrine holds true, as the law of conservation of energy in the natural world. The religious life is mobile and free at its growing tip, while it remains rooted in the common soil and is conservative of its own stem.

The contents of the Christian consciousness are to be studied in the history of its development. Its meanings and values are to be learned, and scientifically formulated as doctrines of faith, very much as the factors of physical evolution are discoverable by observation of the successive forms of organic life. We may trace the line of our spiritual descent both structurally and functionally alike in the institutional structure and formulated creeds and in the functioning of the church in the life of humanity. In this manner we may know the Christian consciousness of life so far as it has yet been attained.

This valuation of the mind of the church, it should be

noticed, is gained in a manner quite different from that of philosophical abstraction or from a purely logical development of theological creeds.[1]

The faith of Christianity was not merely a "deposit"; it is a development. A sound working-theory of development is much needed for its interpretation. Upholders of ecclesiastical and theological systems are apt either to ignore entirely all principles of the development of Christianity, or else to intrench themselves in logical deductions from their own institutional forms and received creeds. Newman's theory of development, and the so-called "catholic" movement that received its intellectual baptism from Newman's thought, sadly betrays this lack of a true biological conception of development. It is rather a dialectical construction of an artificially selected portion of church history, and not a truly genetic interpretation of the mind of the Christ throughout all Christian life and thought. It is at once as true and as false in its deductions as a theory of natural history would be if it were based merely on a classification of the fossils of successive geological periods by their external forms and marks, without any phylogenetic account of their relations and order of descent. Hence such pseudo-catholicism is stationary, but not prophetic. Moreover, so far as such views show any respect for evolution, they fall into the mistake, apparently unconsciously, of the former, but now obsolete, theory of preformation, and seemingly have no idea of the later and now generally accepted view of evolution, which is in scientific circles better known as epigenesis. The chick is not preformed

[1] A dialectic method of development of ideas (such as has been received from Hegel) is vitiated throughout by its abstraction from the concrete realism of history, and emptied of contents by its resolving history into a course of logical movement. An idealism that leaps at a jump to the pure absolute, and then, passing through the finite returns to it again, is but a play of reason, an intellectual game of battledore and shuttlecock, wherein between theses and antithesis common sense is kept continually in the air.

in the egg; the determinants of its specific growth are given in the egg, which are developed in vital relations with its environment. A preformation of the whole body of the church as existing in an apostolic egg—orders, ritual, dogmas, hierarchies, popes, modern Anglican bishops, and all—takes us back in our religious philosophy to the eighteenth century, when the preformation evolutionary doctrine of Haller held the ground against the thesis of Wolff, which now, in these post-Darwinian days, has become the scientific view of natural history. At no point in the past may a specific form of the church be fixed as final and absolutely normal, any variation from which is to be regarded as schismatic, and not to be received without an authoritative commandment from the Lord for its creation. A conception of catholicism which claims historicity is profoundly unhistorical so far as it ceases to be thoroughly vital and dynamic. If indeed we would make earnest with the idea of a continuance of the incarnation in the life of the church, we shall hold it to be true that the divine presence of the Christ has entered into and abides in the life of humanity as a continuous re-creative energy, and consequently that Christianity neither in form, thought, nor deed is to be put under guard and kept fast as a sacred heritage; it is a living faith, implanted by the spirit in the mind of the church, to grow in knowledge and to bear the fruit of its life fresh every season. Was it not the Master who described himself as a sower going forth to sow? And was not the first principle for our understanding the mind of Christ given in the word of the greatest of the apostles: "If any man hath not the spirit of Christ he is none of his"? The true catholic church, then, has right and power henceforth, as it has had in the ages past, to become what it must be in order that in Christ's spiritual authority it may continue to live, and to live more abundantly.

These paragraphs may seem to lead us somewhat aside from the straight way of our inquiry into the nature and final significance of personality, but we bring from this digression an added reason for the interpretation of it which we have already gained from successive points of view. For the Christian consciousness, the creation and historical continuance of the mind of the church, is in itself consequence and evidence of a higher energizing than any mechanical, purely physiological knowledge of mind can account for or reduce to lower terms. In this distinctively religious manifestation of the inner personal life there is no contradiction or violation of the ascertained laws of the natural functions of the mind; the Christian consciousness is immanent in the natural consciousness, while it transcends it. The church in its origin and development, and in its objectified idealism as well as prophetic expectation, is a means toward personal ends of life that are supersensible and of values not to be assayed in temporal utilities; in its communion the personal life realizes its supernal meaning.

5. One other effect of the creative spirit in Christianity should be distinctly brought out—its power to change its own environment.

In a previous chapter we observed the power of personal life to react upon its environment; this transforming power is a signal evidence of the personal influence of Jesus continued through Christian history. The life has become the light of the world, and its shining changes the whole aspect of the world. The energy of the Christian life goes forth to make all things new. It is creative of a new society. It has a gospel of social salvation. In recent times this sense of the social high calling of the church and its inner obligation to render a Messianic service to all peoples has become a dominant character of the common Christian consciousness. Several features of it are noticeable as having special significance

for the richer interpretation of the personal life. One is the fact that social salvation is to be wrought through personal contacts and the transmission of personal influences. The power must continue to be personal, though it may work through institutions. Another correlated truth is that, unless the human environment is purified and vitalized by personal influences, social reform will prove but transient. A society from which it is sought to drive out evil spirits chiefly by legislative prohibitions, but which is not purified by the air and sunshine of the spirit of Christianity will be like the house of the parable, which was swept and garnished, and left empty, for seven other more evil spirits to return and dwell in. It is too often forgotten in the zeal of moral reform that to prohibit is not to save, to destroy is not to fulfil.

Another character of the creative energy of the new Christian society is its prophetic expectation. It is hope for the whole world. It has a gospel for all nations. At once it overleaped the barriers of Judaism, and became the gospel to the gentiles. It fails not with the years of unfulfilled promise, and the waiting centuries behold no diminution of its exhaustless hope. Of the increase of its dominion there is no end. The nations are at war, and civilization is again at stake; but international Christianity shall find another opportunity for its greater work of faith in healing the wounds of the peoples.

Now, therefore—for this is the conclusion to which these observed tendencies all point—such energies of the spirit in the world's experience of Christianity could not be so if after all human society were only a human organism—a mechanism with no spirit of life in the wheels. Such aspects of life would not appear if moral being and social salvation were simply matters of physiological concern and environmental conditions. Industrial welfare is a matter of spiritual attainment as well as an economic condition. The general good, which it is the

aim of all social effort to promote, can be secured only as human beings are recognized as spiritual persons, and are treated as beings, who, according to Kant's definition of persons, are ends in themselves and not means for others.

From the point of view which we have now reached, looking back again along the way which our reasoning has traversed, we may lift up our eyes, and gain a broad world-view. Within the horizons that must always limit our farthest knowledge, we may behold all these things as a whole. The Christian world-view marks a high and serene attainment of personal life. It is broad and comprehensive in its sweep and contents; nothing human is foreign to it, all nature is its possession, final good is its hope, and God is its trust. The personal life rises to its supreme height when, humbled in the felt presence of the divine ideal, it is exalted in worshipful aspiration, and can answer: O Lord, thou art my God!

Here, on the utmost heights of our being, where experience ends and above us and beyond is cloud and infinity, our personal interest in life cannot end. The person who in the feeling of absolute dependence and of Christian exaltation of spirit will say, "My God," can he with assured reason say also of the Eternal: "Thou art my dwelling-place"?

To this final question of the meaning of personal life we are now come; all the ways of life which we have been following lead up to this last most personal question of the future life. What may the course of life already traversed lead us to expect concerning the untraversed way before us? What promise does the known hold of that unknown life?

CHAPTER IX

THE FUTURE PERSONAL LIFE

It is usual to approach the question of our immortality from the moral and the metaphysical side. From the nature of the soul, from the incompleteness of this earthly life, and from the moral values of our present experience it is reasoned that as spiritual beings we are not destined to return to dust and ashes like the beasts that perish.

The course of inquiry which we have thus far followed leads us to approach the question of our personal survival after death from an opposite direction. We now ask: Does the natural course of life from the beginning have still further significance? We would reason concerning the hereafter from the evolution of life up to its highest realization in the present. In view of what is known of the growth and potential energy of embodied mind, can we entertain a reasonable hope of immortality?

I

Approaching it thus from the nature-side, the first question that confronts us is this: Is the way of life further on than we now may see blocked by any known facts? Does anything in experience thus far gained put an end to the possibility of self-conscious existence hereafter?

From the ascertained relations of mind and body, irrespective of all theories of them, no negative presumption against personal survival need necessarily be drawn. On one theory, and one only, would the possibility of the future continuation of personal consciousness be

blocked: if self-consciousness is nothing but a by-product of nerve functioning, thought only a material accompaniment of organic processes, then, indeed, the wear and tear of this physical mechanism is our personal deterioration, and its final breaking up may be the end of us. If a brain of known molecular matter, which may be resolved into chemical elements, is the efficient cause of mental states, there is no real personal life now, and nothing further may be expected after the dissolution of the brain. If we hold that the present configuration of matter is the invariable constant, and consciousness the variable function, it follows with a mathematical logic that the latter has no existence apart from the former; wipe the one off the slate and the other goes with it. Such materialistic hopelessness, however, would be absolutely necessary only on the further assumption that our present knowledge of the cellular structure of the brain is so complete as to preclude the supposition of some more recondite structure of matter with which more fundamentally psychic functions are connected. It might be urged that physiology must carry us to the end of the possibilities of matter before it can affirm confidently that mental action is necessarily conditioned upon the known organization of the brain. This aspect of the question we may consider better in another connection.

Our discussion has already shown that this gross materialistic theory of consciousness is not in the line of fact after fact which the evolution of life presents. We can go but a little way beyond the confines of the inorganic world into the realm of intelligent behavior without discovering that we have entered into a world of activities and ideas which cannot be reduced to physical properties, and which are distinguishable from aimless atomic motions. On the contrary, so far as ascertained facts go, or physical analysis may reach, it might with as much probability be affirmed that matter is the product of mind as that

mind is a function of matter. The idealistic monist has full as much right, if not more, in the scientific field as the materialistic monist. The half-way suggestion, which Huxley with some hesitation put forth, that mind is an epiphenomenon, a kind of by-product of the body, like the whistling of a locomotive, was itself a by-product of an immature science, and it has ceased to play any considerable part in the more critical researches of modern psychology into the nature of the dualism of mind and body. The reduction of these two terms to a function each of the other, is an altogether too easy solution of the organic complexity of human personality. It is an example of what the logicians call pseudo-simplicity. In this hasty answer to the problem of spiritual life both the terms—body and mind, the x and the y of the problem—are arbitrarily interchanged in the equations, and both are reduced to the same value by making each come out equal to zero. But the personal life is positive in both its terms; each means something, and our philosophic reasonings are not true to the life if they result in giving nothing but a phenomenal negation of any reality of being.

Although it is sometimes popularly assumed that science has put the soul out of existence, and left the case of the spirit against the flesh a defeated cause, nevertheless, as Mr. James has noticed, it is hard to find in recent books worthy of scientific consideration "a passage explicitly denying immortality on physiological grounds." Among writers who regard mental processes as organically conditioned by cerebral processes, few would venture so far as to affirm that thought is a function of the brain as motion is a function of a limb, or bile a secretion of the liver. James has rightly observed that there are other theories of the brain's function than the view that the brain produces thought. These theories of the admitted functional relations of the cerebral and

mental processes permit one to hold a purely agnostic position concerning the possibilities of continued conscious existence under other conditions hereafter; they do not preclude belief in immortality, nor would they be contradicted if on other evidence the fact of personal consciousness after death should ever be scientifically demonstrated. Doubtless such positive knowledge of the continuance of mental life under changed functional relations with material conditions would at once greatly modify and extend any working-theories of the interdependence of body and mind that scientifically determined facts may now enable us to form. James, for example, maintains that the transmission theory of the function of the brain, which he prefers, is quite compatible with belief in immortality.[1] Professor Clifford evolved an ingenious and in some respects plausible theory of "mind-stuff," which he regarded as constitutive of the reality of the universe.[2] This view seemed to him to render belief in a continued existence of a spiritual body untenable. We doubt if this is necessarily so. He regards consciousness as "the combination of feelings into a stream." It exists at the same time with the combination of nerve-messages in a stream. It follows, he holds, that when the stream of nerve-messages is broken up, the other stream of conscious feelings will go with it; it will be resolved into simpler elements. The metaphor of a stream, which he uses, does not compel this conclusion. For two streams from different sources may flow for a measurable distance together, and again, under changed conditions, separate and follow different channels. Or the distinctive qualities of one stream, the grosser and more obvious, may be filtered out, while the other is not resolved into its constituents. Death might conceivably be the final filtration of the mind-stuff from the molecules (themselves only

[1] *Human Immortality*, pp. 14 *seq.*
[2] *Lectures and Essays*, 3d ed., vol. II, p. 72.

another form of mind-stuff according to Clifford's view) with which for some time they may be associated. It is a *non-sequitur* that a spiritual conscious existence, if it is supposed to co-exist now with the natural body, must be supposed to cease with the dissolution of the natural. This conclusion would follow only if the combinations of mind-stuff with and without consciousness, which Clifford supposes, were given up, and the brain regarded as the productive cause of mental functioning. Kant's view, on the contrary, that the body is not the cause but a limiting condition of thinking is defended as scientifically justified by Schiller: "It will fit the facts alleged in favor of materialism equally well, besides enabling us to understand facts which materialism rejected as 'supernatural.' It explains the lower by the higher, matter by spirit, instead of *vice versa*, and thereby attains an explanation which is ultimately tenable, instead of one which is ultimately absurd."[1]

We find, consequently, nothing in the facts of nature positively known to inhibit the venture of faith in the hope of life after death. Nor is there aught in death itself to deny the expectation of living again. To die is a process and act in the course of living, and in dying there is not a single moment or act which would be contradicted, which might not occur just as it does, should a departed spirit return and give us indisputable scientific proof that it had survived the process and act of dying. In other words, death, so far as known, proves nothing concerning what may be just beyond death. It is a fact of experience that carries personal life, with all that it has become and means, out of our present vision. It not merely seems to end all; it suggests also much more about our life of thought and love, its more intimate relations with nature and further possible meaning and evolutionary value than an eye, limited as is ours to a small fraction of

[1] *Riddles of the Sphinx*, p. 289.

the scale of ethereal vibrations, can see, or the subtlest analysis of elemental energies can disclose. For a man to die is the most intensely interesting moment and profoundly significant fact of his life.

Death among men comes apparently without discrimination or purpose. It seems to be a final contradiction of us, denying our very selves often when we have most reason for being ourselves most fully. Against the affirmation of the spirit which is in man is put suddenly the abrupt denial of death. But this denial as well as the affirmation of life must have reason, if indeed the world is one of rational order. Unless there is no reason at all in nature, unless life itself is the very height and exploitation of the irrational, both death and life, the one as the other, must have reasonable use and meaning. In proportion as we may discover such meaning in life, we may trust that it is to be discovered some time, if not now, in death. What the reason in death and for it may be we can now but dimly surmise; yet we are not wholly without signs of its possible place and service in evolution, and its ultimate value also in a realm of ends.[1]

We reason thus that survival after death is naturally possible, so far as we have any scientific knowledge, but if we endeavor to conceive of it, imagination fails us, and difficulties of realizing how this may be beset us on every side. The real trouble with belief in personal immortality seems often to be not so much lack of reason for it as default of imagination before so great a draft upon the power of the heart of man to conceive it. Sensuous imagery fails to symbolize the supersensible. Thus at times the thought of the unnumbered dead in the countless ages past appalls us—the measureless succession of the generations that have perished from the earth. We discover the bones of prehistoric men together with the

[1] For a discussion of this natural relation and value of death to life I may refer to my volume on *The Place of Death in Evolution.*

bones of animals, buried in the same dust from times that run far back through unknown cycles of years. They lay down together, those cave-dwellers and the beasts that perished, as they alike were made of the same earth earthy; how shall they have escaped one common lot? Where have the spirits of men through these interminable ages been waiting, what have they been doing? In what regions of infinite space have these unnumbered dead, from other worlds also it may be than ours, found their abiding-place? In what societies may they have gathered? In what realms of activities, in what pursuits are they engaged? And if these all live again, or if only those most fitted to survive have entered into life elsewhere, how has it come to pass that after these long ages of their existence and their increasing knowledge and mastery of the forces of the universe, amid which this little earth has its orbit, these spirits of the dead, the keen, active, most intelligent of them all—they who when on earth attained power of mind to discover hidden secrets of nature's power and to compel energies from outlying space to do their bidding and carry their messages around the world—they, nevertheless, have found no means, invented no methods of making themselves known to us and by intelligible and unmistakable signs? Why is it that they have acquired no power to come back and make themselves known in this their birthplace and early home? No wealth of their vaster knowledge do they bring to our toiling sciences; no gleam of their light falls upon our faith, growing dim while the ages pass and the vision fails. Or if, as some would have us believe, a few departed spirits have gained transient and confusing control of minds as exceptional mediums of their communication, why long since have not such possibilities of intelligent converse with mortals been mastered by the spiritual powers? Why have they not made themselves in literal truth for our enlightenment

familiar spirits? Amid possibilities so great, why results so trivial?

This utter failure of regular and clear communication between different worlds or separate spheres of possible spiritual existences, our own and the realm of disincarnate intelligences, presents a speculative difficulty to belief in their survival, if we think of the universe only as a natural order, without superior moral requirements and higher ends. Looking at it as a system of natural forces only, we may indeed wonder why the ethereal medium pervading space might not have been made the means of interstellar communications, if there are intelligences superior, may be, to ours in other worlds. If we are able to find in the lines of the solar spectrum an alphabet by which we have learned to read messages concerning their physical structure that come from farthest stars, we may well wonder why spirits from other worlds, if such there be, have not long ere this compelled these radiant energies to convey some signs of their existence to us, by some means found some language by which they might communicate with us even from the utmost bounds of space. Our wireless telegraphy is not dependent upon this earth's atmosphere; we use ethereal pulsations, the powers of the heavens, in carrying our thoughts around the world; why should not thought be carried to and fro far as these ethereal waves may reach? So, as we have just observed, we might ask and wonder, and without answer, if, as science believes, the universe is one system and formed of similar constituents in all the worlds of space.

All such questioning is at once set in a different light the moment we consider the world as a moral order to which the natural order has been made subservient. Moral ends of being may set limits which otherwise would not exist or be insuperable. The questioning in which we have just indulged is not to be answered; but the

difficulty involved in it may be located where it will not stand in the way of a reasonable faith. And rightly to locate difficulties that cannot be removed may enable us to pass by them. Such is the case when we consider that such intercommunication as we have just imagined might be a natural possibility, if there are spirits in different spheres to avail themselves of the means of it; but for us here and now such communication may be restrained by higher moral reasons, for purposes of ultimate good; as a regular method of supermundane telegraphy, quite conceivable in itself considered, such communication may not at present find fit time and use in the moral order, in the methods and seasons of the divine education of our particular world. If there is truth in Lessing's idea of human history as a divine education of man, it is a large truth capable of extension over many perplexities, and of use in enabling us to wait for the solution of matters which life on this earth is not yet mature enough to be taught.

This earth may need to be shut up from too vast and free an intercourse, in order that it may learn its own lesson through a prolonged training, before ever the human mind be set free to hold converse with the heavenlies. For the race as for individuals, for the universal good at last, limitations upon otherwise natural possibilities may be most salutary and beneficent. If exceptions should appear, they would not be miracles, as they seem, but rather occasional departures from the regular course of the divine education of man for special needs.

Moreover, the education of moral persons, like ourselves, may best be conducted by the impartation only of such knowledge as may fit them for their immediate tasks, or subserve their present growth; too great illumination just now might be too dazzling and blinding; no man, we read, can see God and live. Too much celestial knowledge imparted all at once might defeat the

very purposes of the education of man in capacity for knowing even as he is known. It was the tempter, in the old story of the garden, not the "spirit of education," who would have the first man become in a moment, by one hasty bite, as one of the gods in knowledge. Now souls have knowledge enough on which to grow. God does not overfeed his children here.

Other conceptual difficulties, of which there are many, overshadow the natural belief in immortality; it is needless to enumerate them. We refer to them, in passing, because they are to be recognized as difficulties of the imagination more than of the reason. At times we feel an utter prostration of the imagination in the presence of the vast mystery in which we dwell by our little firesides. These are "obstinate questionings," but they are not obstinate denials to be put in the way of a rational working faith in the spiritual life here and hereafter. It is true that the old question of the master in Israel will be often repeated by the master in science with the acquisition of new knowledge and its seeming contradiction of past experience: "How can these things be?" For with the widening of the horizons of knowledge the sense of the vaster, outlying mystery increases. Thus when the earlier and easier conceptions of the abode of departed spirit had to be put away among the childish things of man's intellectual infancy, the new knowledge of the stellar universe removed the heavenlies far from us, and faith faltered where imagination failed. But the same new knowledge, broadening with the years, has opened on every side glimpses into some larger reality, and left us wondering, as children again, amid things before undreamed of in our philosophies. Yet these new knowledges open only to close again before the scientific imagination. It is well to remember that the elements which modern scientific researches have verified are themselves incapable of visible representation, and are unimaginable

although not unknown. They can be discovered in their effects, followed in their action, and represented by mathematical symbols; but we find it hard to conceive, well-nigh impossible mentally to visualize them. They were at first speculative aids of science. Their fitness for use as a basis for constructive physical science is enough to reassure us that seeming impossibilities of imagination are not necessarily impossibilities of reason. It is always possible that the conceptual limits which shut knowledge in, may in one direction or another open out for further vision. This holds true alike in our converse with the natural and the spiritual world. In either realm a single beam of clear knowledge, striking through our surrounding ignorance, might clarify our science and dissolve as in the twinkling of an eye our scepticisms. It is so with reference to the question of our future life; there is nothing in present knowledge to inhibit us from availing ourselves of the speculative aids of faith; nothing known to prevent us from making the most of such indications of man's survival value as may appear. This may be seen more readily if we make the following supposition.

Suppose that one or two of all the multitude of departed spirits should appear in some verifiable manifestation ready to open intelligible communication with us. Suppose that their claim to be heard should be subjected in our psychological laboratories to prolonged scrutiny, submitted to control-tests, and by repeated experiments verified as strictly and thoroughly as, for instance, the family history of the several radium rays has been worked out. Suppose that to this extent, not to carry our hypothesis too far, these spiritual intelligences had demonstrated that their hitherto unsuspected energies should be recognized in the play of physical actions and reactions, that at least they could act as the "sorting demon" of Maxwell's scientific imagination was conceived capable of doing in thermodynamics. What, then, on this sup-

position might be the consequences for our existing knowledge of the material world and its laws? It might well be startling, but it would not be utterly destructive of our science. It would prove evolutionary rather than revolutionary. Such discovery of hitherto unrecognized spiritual energy amid natural forces might have very much the same effect on modern science that De Vries's observations of plants in the very act of mutation is having on the Darwinian theory of variation. It does not contradict the principle of natural selection, while it may render somewhat more intelligible other factors of evolution. The supposed revelation from beyond our world of experience might have much the same consequence in our knowledge of nature that the discovery of radium has had on the atomic theory; at first seemingly destructive, it is found to be complementary. Since scientists have had time to think it out and to follow it out experimentally, it has given to the atoms a new significance, and revealed within them a world of forces before unthought of in science. No doubt in the light of any such spiritual manifestations as that supposed, as in the advent of any new, verifiable knowledge, our working-theories would have to be revised, our conceptions of things sensible and supersensible clarified, enlarged, harmonized. Perhaps the whole circle of our theologies might be pushed farther out into the encompassing mystery of divinity. But old truths would not be lost though changed; nature so far as really known would suffer no violence; and the clearer and more serene would become our assurance that all things work together for good in a universe of ordered reason and moral ends.

The way from the present to the future life is not closed by science, it is only lost in ignorance. This is the preliminary point to be kept in mind as we seek to find in present experience what signs may be given of

the continuation of personal life beyond immediate experience. For it is to be remembered that death might continue to occur, and not a single fact in the dissolution of the body and disappearance of consciousness be altered, even though, as just supposed, some unexpected demonstration should be given us as proof of the continuance of personal life after death. The absence, therefore, of any positive evidence to the contrary leaves us free to continue our search for any present signs of the ultimate significance and destiny of personal being. Our further inquiry, consequently, still keeping close to nature, takes this direction: What positive material, if any, may be found in nature and personal experience from which to construct a reasonable conception of the future life? We put the question in this double form—a reasonable *conception*—for, on the one hand, an argument for immortality that fails to open some imaginative outlook toward the hereafter, however transient or indefinite the momentary vision may be, will not answer fully the religious feeling, nor satisfy the cry of the heart; while, on the other hand, no discussion of immortality, however devotional or comforting to many it may be, that does not bring belief in the world to come into some direct and harmonious relation with our knowledge of things present, can meet the demands of rational intelligence.

From the direction which the evolution of life has already followed, and from the point of view where man now stands, looking backward and forward, some idea is to be gained of the possible continuation of the same way of life; very much as a surveyer, from the direction of a line already laid out, may dot on a map its further extension through a region still unsurveyed. We may gain a bird's-eye view of this field of inquiry by glancing at those theories of the future life that have been maintained with sufficient probability to enable them to survive in modern thought.

1. The ancient theory of metempsychosis, or transmigration of souls, has reappeared in a tentative manner in recent philosophy. Professor Ward, for instance, in his recent volume [1] admits it for consideration as a view having some plausibility, although he does not regard it as more than a possible view of immortality. It is presented with greater elaboration, as a metaphysical basis for belief in future continuance of life, in Mr. Schiller's *Riddles of the Sphinx* (chap. XI). He presupposes a plurality of ultimate existences, whose spiritual evolution corresponds with the material evolution and inspires it. By a kind of pre-established harmony a twofold process of natural selection is supposed to occur, during the course of which these original spirits, or germs of spirits, find successive re-embodiments in harmony with their degrees of psychic development and their measure of moral capacity. The objection that this would not secure the consciousness of personal identity, is met by the answer that it would secure so much of memory as is necessary for an ascending spiritual development, and that in proportion as the life so continued through successive bodily forms becomes more and more worth re-embodying, intimations of the past would enter into its existing consciousness; while, in its perfecting, memories would lengthen, and the intellectual and moral values of the whole series of incarnations would be treasured up in the final and immortal consciousness of personal being—the several stages of the past being, as it were, recapitulated in the maturity of spiritual being, as biology traces a general recapitulation of the previous course of organic evolution in the development of the embryo.

Quite irrespective of the claims of the theory in itself to consideration, it calls attention to some elements of value which should not be overlooked in any philosophic view of immortality. One such is Mr. Schiller's asser-

[1] *The Realm of Ends*, pp. 401 *seq.*

tion that there may be degrees of memory hereafter, corresponding to degrees of life now. He says: "If we can conceive a future life, the reality of which depends on memory, it will admit of less or more. And, if, as seems natural, the extent to which the events of life are remembered depends largely on the intensity of spiritual activity they implied, it follows that the higher and intenser consciousness was during life, the greater the intensity of future consciousness."[1] Hence he is able to say of the lower forms of animal life: "They have a future life, but it must be rudimentary" (p. 385). He can thus consistently say further that "the lower phases of evolution would not generate sufficient psychical energy to attain to any considerable degree of immortality," while he believes, in many cases at least, that he may answer affirmatively the question whether "man has reached a sufficient height of spiritual evolution so that the human soul, the phenomenal self of our earth-life, persists as *human*" (p. 393). This would relieve somewhat the difficulty which meets all views of natural immortality, that of conceiving how those who have fallen during their earthly life to the level of the brutes, whose passion and sin seem to have dehumanized them, and who have become unfit to survive, nevertheless by the mere accident and shock of death can in a moment be made over into spirits capable of moral perfecting. According to this view the continuance of their individuality would be only an obstacle to the development of their spirits; so that their personal consciousness would lapse into oblivion while their spiritual potentiality, whatever might be left of it, would return to its source, to begin over again from the bottom a new life. The fitness of the phenomenal self to adapt itself to the conditions of a higher life is thus made the test and measure of personal survival. "We need not suppose that personal immortality will be forced

[1] *Op. cit.*, p. 385.

upon those whose phenomenal self has not desired it nor prepared itself to survive death, and who make no effort to preserve the memory of the past, nor yet that those should be balked who have really and intensely desired it" (p. 402).

Whatever measure of truth there may be in these reflections, the chief objections to this theory are that it requires several subsidiary hypotheses to buttress its main proposition. In accounting for the facts of heredity it is obliged to imagine a singular parallelism between physical generation and a selective adaptation of spirits awaiting their moment for fit embodiment—a parallelism which carries further back into the unknown, and with increasing conceptual difficulty, Leibnitz's theory of monads and pre-established harmony. Though Mr. Schiller struggles to fit his view of transmigration into the frame of natural heredity, there may be more truth than we know in the assertion that "we are descended from angels and ascended from the beasts" (p. 403). It may also be admitted that this view easily leads to a thoroughly optimistic conception of a progressive evolution, during which the evil fades more and more into a negative element, while the good becomes the dominant factor of an ascending life, the goal of which is an end of all evil and the attainment of the supreme good. These are elements to be contained in a distinctively Christian hope of immortality.

2. Another view, in partial agreement with that just mentioned, which has found advocates in recent theological thought, is the theory of conditional immortality. Personal immortality is regarded as a prize of life to be won; only those who become fit to live shall survive death. Others could not live in the heavenly environment; that which is of the earth earthy shall pass away. From an evolutionary point of view much may be said in favor of this doctrine of the survival of the fittest only

after death. It is a conception of the development of personal life in harmony with laws of life that obtain in organic evolution and devolution. Life in nature may be lost as well as gained. Degeneration beyond recovery is not unknown; as some parasitic forms have lost their original specific characters; casting off one after another organs which they possessed as free swimming bodies, they have become mere parasites. Such degeneration is related to the impoverishment of the nutriment required to maintain the organism at its full vitality; biologists have not found means of determining whether by a gradual increase or change of nutriment the process of retrogression into sedentary organisms, "the vicious circle of parasitism," might be reversed, and lost organs and functions be regained.[1] Analogously, it might be reasoned that a human being may become dehumanized; in a course of life that starves and stunts the higher intellectual, moral, and spiritual powers, a person might fall out of humanness and descend to the level of the brute. So men have seemed to become denaturalized. From lack of sufficient moral nutriment in the social environment, or by self-wasteful viciousness or consuming passion a brutal variety of humanity has been produced; into this dehumanized class men and women even who were born in circumstances favorable to a fairer life have fallen. From the faces of some such unfortunates all traces of the spiritual seem to have disappeared, and on them there is written the mark of the beast. Sin is a consuming fire of the image of God in man; unquenched, it leaves only a blackened ruin of the human. Some criminals appear to have sunk so far below the level of the human that they have become apparently incapable of any moral perception of their crime; and, more than that, personal feeling itself seems lost—they appear incapable of realizing their own desperate condition. Taken

[1] For examples see my *Through Science to Faith*, pp. 197 *seq.*

just as they appear to be here and now, unfit to live, self-delivered unto death, beyond the power of human justice to set free, or the reach of charity to save, are such beings already so self-consumed that death may render to them only the last mercy of returning them to the dust and ashes from which their spirits once were quickened, and an infinite pity blot their names out from the book of life? We may not judge; divine pity may have no limit to its saving grace. But from a biological point of view both ascent of life to survival-value and descent beneath the human to the animal and the earthly are alike conceivable. Theologically, there is to be maintained a trustful reserve of judgment concerning ultimate issues of individual lives beyond the grave; the love of God is not to be measured by our thoughts. The most that may be said of this hypothesis of conditional immortality is that it enhances the personal motive so to live as to be worthy of immortality. And as a theodicy, or speculative justification of God's ways toward men, it serves as a suggestion of a possible method by which whatever is personally salvable shall be redeemed, and all consciousness of suffering pass eventually away from a universe of perfected life.

3. An older and still prevailing view is that the soul is naturally immortal. Personal being is said to be a gift of God, which, once given, is not subject to recall. Christian theology is indebted for this belief in natural immortality to the ideas of Plato more than to any explicit teaching of the Scriptures. In the conception of a single, immaterial soul-substance religious faith has long possessed a refuge and a fortress for faith in immortality. For better or for worse, for time and for eternity, the germ of deathless being is assumed to have been implanted in every child of man, and for the ultimate issues of these unnumbered multitudes of souls God's justice and grace must be trusted.

As belief in the indestructible nature of the soul had its origin in philosophy, so it has had its use in defense of religious hope from philosophical doubt. But it did not enter as an avowed factor into the apostolic preaching of Jesus and the resurrection; nor is it an idea essential to the maintenance of the Christian faith in the eternal life. A belief, however, that has prevailed so largely in religious thought, and at the same time entered so deeply into religious experience, cannot be lightly dismissed because it may not be altogether conformable to modern habits of thought. Judged by pragmatic tests, this belief must have in it some vital element of value, for it has worked as a personal truth in the lives of a long succession of believers. What such element of vital value may be, and whether it may be conserved in some other conception of immortality, may be better judged as we search further in present experience for any signs of our future continuance. Before passing to this inquiry, one other philosophical view needs to be noticed.

4. It has been thought by many metaphysicians, as well as by some writers of scientific training, that the individual consciousness shall ultimately flow back into, and coalesce with, the universal or divine life. So some of the religious mystics have felt that the limited, individual life is at once lost and saved in union with God. Corresponding to a pantheistic philosophy there has developed what might be called a pan-humanistic idealism—the conception that these little drops, the frail spherules of distinct human existences, themselves momentarily precipitated from the infinite, after their brief hour of being, are destined to be resolved into the Infinite One. Finite personality is to be made perfect in its comprehension in the Absolute.[1] The value of the self-life is not, how-

[1] Mr. Bradley says: "Where do we pass from Nature as an outlying province in the kingdom of things, to Nature as a suppressed element in a higher unity? "—(*Appearance and Reality*, p. 494.)

ever, to be regarded as utterly lost in absorption into the Absolute One; as Mr. Bradley further says: "Myself is certainly not the Absolute, but without it the Absolute would not be itself."[1]

It would be idle to toss aside as merely so much metaphysics these more or less pantheistic, or pan-humanistic ideas. In some form they have always appeared in philosophies and religions from Plato's idealism to Spinoza's Absolute; in Plotinus's loss of self-consciousness in God, in the mystic's vigil, and Tennyson's prayer for "a new vision of God." There must be some truth at the root of a metaphysics that has lived so long and that still brings forth fresh fruit in our season. Such truth of value in these more impersonal ways of conceiving of immortality may appear later on, if we begin our inquiry with that which is nearer and more real in the common sense of life, and from that firmer ground proceed to more speculative contemplation of our possible future life. We turn, then, from these various theories to follow out those principles and tendencies given in present experience which look forward for their completion beyond this present existence. From the facts and forces of our present personal knowledge must be gathered the reasons for a natural and hence satisfactory hope of the future consummation of the life which we know now in its beginnings in our personal consciousness of it.

In general we are to keep in mind that faith in immortality bears a direct relation to the sense of the moral values of life. In proportion as these run low, it diminishes. As the worth of personality is enlarged and enriched in the present consciousness of living, the hope of continued life hereafter will enter more fully and firmly into the thought and purpose of a man's heart. A life worth living now will be esteemed well worth living hereafter. And no conception of immortality can be great

[1] *Ibid.*, p. 260.

enough if it fails to comprehend and enhance all that makes life worth living now. A thoroughly satisfactory existence for us after death must be intensively rich as well as extensively prolonged. It would be inclusive in its contents of all the precious things of past experience as well as able to possess itself of futurity. Otherwise it would not be fulfilment of our personality, not *our* immortality; it would not prove to be the gift of eternal life worth our seeking for until we find it.

What, then, are the strands of personal life that must be conceived as running on unbroken, woven together in the wholeness of the life to be desired hereafter? What energies and elements are now so essential to a full personal consciousness that we must assume them to be constitutive factors of the future life? We should grasp firmly in our reasoning these essential factors of the life which in the Scriptures is said to be life indeed. The integration of them all in personal consciousness hereafter is the substance of things hoped for. Furthermore we shall find it an easier task for reason and a nobler venture of faith to hold all these elemental factors of our present personal being together in the hope of immortality. It is better and wiser to trust in their full integration in our future experience. It is also a simpler and a happier vision of imagination and a serener peace of heart so to think of our present selves as continuing to be hereafter in all the human relations and personal powers and affections that render our lives now rich and full. This is by far more reasonable than it is to stop short in our hope with a half-truth of life, to put up with some shadowy philosophic idea of immortality in which individuality is merged in some indefinite spiritual universal; or to imagine ourselves as resting forever in some Elysian state of mind, vacant of those activities and friendships which we now esteem as the happiest and most intimate meanings of our personal experience. The assurance of

immortality naturally grows greater as we find ourselves enabled to fill the thought of the future life full to overflowing with the life abounding in the present. If we single out any one element of it, and should be compelled to conceive that alone to be continued, while other vital strands are broken off short, then such single cord will have to sustain the whole weight of the argument for immortality. To this idea the saying of One of old may be applied: a "house divided against itself shall not stand." The carrying on all together the full and harmonized values of present existence, bodily, mental, spiritual—continued living with all our mind and heart and strength—this only is the assurance of faith which is the substance of things hoped for. Insistence upon this affirmation of personal wholeness in considering the reasons for belief in personal survival after death is to be urged likewise for the pragmatic value of the argument; for this hope in the continuance of us in all that makes us what we are now fits best into our present needs and action; it *works* better than any partial and attenuated hope of some possible immortality. Loss of faith in the future life may occur from hoping for too little when we should hope for all. A half-hearted faith may be broken-hearted at the shock of death which seems to sunder all personal ties; for us immortality must be all, or it is nothing.

We proceed, accordingly, to take up one after another certain primary elements which are constitutive of selfhood, and to consider them separately and in their coworking as positive factors of the personal life everlasting. These primary factors may be characterized as follows: (1) An integrative power of memory. (2) A self-identifying activity in consciousness. (3) A conscious responsiveness to an external universe. (4) A self-affirming energy—the will to live. These factors are complementary, and are involved, each in the others,

in the wholeness of personality. There must be a degree of memory sufficient to form a ground for self-identification; the ego can define itself as subject only as distinct from an object; and the whole field of consciousness must be pervaded by the will to continue living—the positive charge of the field of personal being. What we are aware of as our very self is not exhausted in the affirmation, I am; it is interfused with the consciousness, I act, and in acting I am what I am. The possibility, therefore, for an individual to live again will depend directly on his ability to maintain the possession of these integral elements of his being in sufficient degree at least to enable him to regain and to maintain his self-consciousness as a unified whole.

What indications, then, are there in experience that self-consciousness in its integrity may be continued, its several elements unbroken by the apparent sundering of its physical bands in death? First to be considered is the possibility of the maintenance of some degree of memory, of enough recollection of the past to make the future real.

At this point, from the side of physiological psychology, the question rises abruptly before us: How can memory, which is now so organically bound up with neural processes, so obviously dependent on cerebral structure, be supposed to survive the dissolution of the body? Undoubtedly memory is a brain-habit as well as psychic functioning; if the one is stopped short, how can the other go on? But it is a too-short cut from physiological investigations to the metaphysical conclusion that all memory vanishes when the cerebral cells cease to function. Before we may leap to that conclusion an immense field of inquiry would need to have been scientifically traversed and surveyed—a field of unknown possibilities, only the outskirts of which experimental psychology has as yet reached. Along introspective ways also toward

the central depths of personality we must seek to penetrate, unless we are to abandon all research into the intimate reality of our nature. There are far-reaching potencies hidden in matter and energizing in mind, which are to be followed to issues beyond our immediate sensory knowledge and their secrets discovered before any science can say: Here memory comes abruptly to an end; at this moment, in one last pulsation of the heart, love is gone forever. Science, which frequently has passed from one close compound to another, which has knocked long at many a barred gate to find it at length unexpectedly opened as by lightest touch of some new thought, can affirm no bound of being to be final, no door to be closed forever. It can fix no horizon line for our life, and it would betray its own working-creed were it to say: What we now know of the living and the dead is all, and there is nothing better than it. It is no mere fancifulness, it is the poetry of science in these lines of Clough:

"Hope evermore and believe, O man, for e'en as thy thought
So are the things that thou see'st; e'en as thy hope and belief.
Go with the spiritual life, the higher volition and action,
With the great girdle of God, go and encompass the earth.
Go with the sun and the stars, and yet evermore in thy spirit
Say to thyself: It is good; yet is there better than it.
This that I see is not all, and this that I do is but little;
Nevertheless it is good, though there is better than it."

We have just used the phrase, a sufficient degree of memory. Critically regarded, what measure, then, of memory may be deemed to be requisite for the continued unity of personal life?

A minimum of memory may be detected in the earliest traces of organic habit. A slight modification of the structure of an organism by repeated acts may loosely

be called a beginning of memory. So, likewise, those neural co-ordinations which after repeated conscious effort become automatic habits, such as motions of muscles which need only to be touched off to go on of themselves without troubling our consciousness, may be included under the general term memory. And from simplest protoplasmic modes of reaction through the formation of habits and the rise of instincts up to intelligent acts of recalling the past, and by experience of the past modifying the present, the genesis of memory proper may be traced as a physiological process. The difficulties, however, in accounting for all the facts of memory merely in physiological terms increase the higher up the scale of memory-values we ascend; the descriptive words that seem to fit the earlier physical facts, and to represent sufficiently what occurs in the formation of habitual actions, fade away into metaphors and become imperfect and vanishing representations of what occurs in the complex consciousness in which our past becomes a definite guiding factor of our present thought and action. We have already discussed the psychic problem which remains unsolved after the physiological factors in memory have been delineated and their rôle accounted for (pp. 77 *seq.*). But at this point, in relation to the possibility of a future life in some embodiment, we should look again to this physiological side of memory to discover whether it presents an obstacle or an aid to a conceivable belief in personal immortality. For, while at first glance the demonstrated fact of the vital connection now between memory and the neural structure of this body may be regarded as a difficulty in the way of such belief, nevertheless this same knowledge of the physical basis of mind may open a larger possibility of life both in body and soul. How this may be so will appear as we examine further the relations between the neural connections and the psychic dispositions which

are integrated in true memory, and as we consider also the degree of memory requisite for self-identification whether in this life or another. Here we take our point of departure from the fact that some neural connections are at present indispensable conditions of memory. This fact is demonstrated by the interruption of memory through physical injuries, and in some cases the complete loss of the consciousness of personal identity. A blow on the head may strike at once out of mind all recollection of what was in mind the moment before the blow fell. Experimental psychology has shown that local lesions of the cerebral cortex may occasion loss of some kinds of memory, such as memories of words, or visual memories, or the power to associate the images derived from one sense with those of another in normal motor-responses, as we do when we articulate a written word or write a word which we hear spoken. To this physiological basis of memory experimental psychology adds another series of mental facts; there are other processes in conscious memory which are not to be identified with the neural conditions, and without which only a very rudimentary kind of memory is possible. Distinctively psychic factors remain in the analysis of an act of recollection, which cannot be directly resolved into any cell-images, or derived from supposed traces left in the brain. Thus careful experimentation discloses a radical difference between a mechanical repetition of a series of numbers or nonsense-syllables, for example, and a memory of *meanings*, as when one recalls a written line or a whole verse from the meanings of some of the words. Mr. McDougall has adduced considerable experimental evidence to justify the view that there are fundamental differences between habit and memory proper, that they do not obey the same laws, and that memory proper is not conditioned solely by material dispositions of the brain. Analysis leaves a distinctive

and irreducible psychic element in the memory of meanings. In true memory we find these two factors, habit and meaning, coexisting and co-operating in various proportions, and "always meaning is immensely more effective than habit as a condition of reproduction or remembering."[1] He holds that the most wonderful of all forms of remembering, the visualization of complex scenes in some cases is explicable only on the supposition that "the complex of visual sensations serves as a clew that brings to consciousness a meaning that was latent in memory."[2] This difference between a mechanical association and a true memory is illustrated by the difference between remembering the location in space of a series of points of light thrown for a moment on a screen, and the memory of a face that may have been seen only once; in the former case there was a minimum of meaning, while in the latter meaning was at its maximum. "There persist psychical dispositions, each of which is an enduring feature of the psychical structure and an enduring condition of the possibility of the return to consciousness of the corresponding meaning."[3] This view admits on the one hand all the ascertained facts of the physical basis of memory, and on the other hand it harmonizes with them the play back and forth from the psychical side; it offers a conceivable explanation of memory intermediate between the two inconceivable extremes of mere materialism and an unconditioned spiritual theory of memory. It is similar in the main to the view which Bergson has presented with incisive metaphysical acumen in *Matter and Memory*. As supplementary to Bergson's conception of the ideas that enter into pure memory, McDougall's analysis of facts from the physiological side is the more convincing. We dwell upon this double aspect of memory because it is a postulate of our further reasoning concerning the pos-

[1] *Body and Mind*, p. 333. [2] *Ibid.*, p. 338. [3] *Ibid.*, p. 343.

sible continuation under other material conditions of the personal life. The future life must be the prolongation of the same life after both kinds physical and psychical, in a similar mode of energizing, although not necessarily by the same means or instruments. Thus *we take up the supposed difficulty into the very idea of personal immortality.* We assume as granted that hereafter as now both material connections of some kind with nature, and also psychic energies must in some co-ordination work together in the realization of personal consciousness. These two elements, the natural and the spiritual, are bound together from our birth and woven together throughout our lifelong experience, and we should not continue to be fully ourselves, nor would our past life remain as our heritage for the life to come, if essential parts of personality were to be so utterly dissociated by death as to be incapable of any future reconstruction, if indeed death could put asunder forever what has been so joined together in life.

Another point in this connection remains to be determined. Granting that some degree of memory must thus be assumed as necessary for a self-identifying consciousness hereafter, the question still remains: What degree of memory may prove sufficient for the recovery of the personal sense of existence from the sleep of death? The minimum of meaning necessary for such recovery seems not difficult to determine. In order that we may continue to live personally two separate points at least should be discriminated in consciousness, one as past and the other as present; and the two must be connected as parts of one experience, each as a point in my experience. All spatial terms, such as points and lines, it is true, are metaphorical, and hence may become misleading when used in interpreting mental life, as Bergson has so urgently insisted. But not forgetting that in the use of such terms we are dealing with symbols of living

realities, we may suppose that a line drawn between two separate events, connecting them as one experience, may represent the minimum degree of identifying memory, below which personal life cannot persist, above which it may rise to clear self-consciousness. We may go still further and suppose that if a single unifying memory between the time before and the time after death be granted, the possibility of recollecting whole periods and of recalling many memories of the past life on earth might thereby be realized under future conditions of suggestion. The analogy of sleep and awakening renders clearer how this might occur. Sleep is an interruption of consciousness accompanying a functional depression of a complex system of neural connections. But it is not a structural break either of body or mind. Awakening from profound slumber is not a re-creating, but a recollection of oneself. Both physiologically and psychologically to awaken, it may be said, is to remember. Sometimes in a quiet awakening from a deep sleep we seem actually to re-collect and recover ourselves. At first a certain vague feeling of awareness steals over us; there is a mere perception of light, then a more conscious effort to locate ourselves, but after a moment or two in the mental illumination of some distinct memory we come fully to ourselves. So out of the quiet deeps of sleep we rise again to the life of a new day, to find once more the burden of care or sorrow which had been laid aside in sleep, or to greet with fresh spirits the joy and promise of another day. The special point to be noticed is that for such recovery of self from sleep a single memory may suffice; by means of a moment's sense of what I was I know what I am alive to do. The psychical significance of this analogy is not to be lost because during sleep the physical powers continue to function, while in the unawakened slumber of death they pass from our observation and, so far as this body is concerned, cease

to exist. The point is this: if mental life is now so bound to this body that it may temporarily disappear, yet at slight stimulus be recalled, this indicates more subtle relations between mind and body than we may fully apprehend; and in some similar way the self which can awake from sleep may recover itself in other physical environment than we now can discern in our present very limited perception of nature's radiant forces; in finer touch with these, in closer relations to embodiment more fitted to its spiritual nature the self may survive and retain potential memory enough to regain self-awareness, and to find itself again in the unseen universe. So far, at least, as suggestive of possibilities of awakening hereafter, awakening here from sleep may go.

The psychic potentiality of memory is indicated in some abnormal mental states. That a personal being has some latent, physically indissoluble power of self-return and self-identification, in despite of interruptions or total losses for a time of self-identity, appears probable in view of many facts that have been observed in cases of lesions of the cerebral areas, of hypnotic suggestion, and of dissociated personality, and the recovery from such broken states of consciousness to normal conditions. To these phenomena of abnormal consciousness we shall refer again; it is enough in this connection to notice this single fact, that disappearance of the psychic energy from the field of our observation cannot of itself alone be construed as an absolute loss of potential psychic energy. Its temporary inactivity under partial interruptions of its physical relations raises rather the further inquiry how long the psychic power may lie latent without destruction of its germinal potency, and, moreover, whether under other relations to external influences than these bodily relations to nature, in some other clime and freer air, it might not conceivably spring up and bear fairer flower and richer fruit. We know not what secret of em-

bodiment lies hidden at the root of the essential vitalities of the personal being. We know not that this mortality is the only embodiment with which it may clothe itself or be clothed upon. While perhaps a soul may be capable of self-destruction by continued sin, it may be incapable of suffering corruption from without itself.

We may go somewhat further than this and without violence to present knowledge conceive that the psychical may have in itself some active power of overcoming death. It may not be wholly passive in the process of physical death. It may be possessed of a natural ability to recall itself under the stimulus of other conditions than this earthly life. It may arouse itself from the sleep of death in response to more ethereal influences of nature than we can be aware of; quickened by these to enter into freer and larger intercourse with the universe than it could in this earlier, earthlier stage of its embodiment. It is reasonable to suppose that this psychic energy has its law of conservation, and shall prove itself to be a persistent power through whatever changes of form or modes of activity it may pass.

These suggestions may seem to carry us too far from our immediate inquiry concerning the minimum amount of memory necessary to continued self-identity, and they may be deemed too speculative; but speculative thought is sometimes useful if only to show that more things are possible than we are wont to think. We return to our immediate question concerning memory in its relation to the future life as we call again attention to the fact, which Mr. McDougall has rightly emphasized, that there is observable a reciprocal relation between the meanings and the sensory contents which are associated with the meaning of things. "Each meaning, as it comes into consciousness, tends to restore the sensory content which serves as its clew, when the idea is evoked from the physical side."[1] That is to say, a memory-image,

[1] *Op. cit.*, p. 343.

for example, may be recalled from *both* sides: either by a sensory stimulus calling up an idea or by an idea recalling a sensory complex; either may furnish a clew to the other. We simply would extend into the possible life hereafter this power of an idea to recall what once sensibly suggested it, as well as its recall by the recurrence of what through the senses first suggested it. Something in new spiritual surroundings might be stimulus enough to revive ideas of the former life on earth, or some ideas find stimulus enough amid changed conditions themselves to bring back former scenes. By suggestion either from without or within a soul awakening in another world, memory might be quickened, and thus the personal identity maintained unbroken. In regard to the question of self-identifying memory hereafter Mr. McDougall consistently holds that, "though it is not possible to say just how much of what we call personality is rooted in bodily habit, and how much in psychical dispositions, yet it is open to us to believe that the soul, if it survives the dissolution of the body, carries with it some large part of that which has been gained by intellectual and moral effort." And (although he introduces as a supporting hypothesis a conception of "imageless thought," which seems needless) he admits the possible alternative that the surviving soul "might find under other conditions (possibly in association with some other bodily organism) a sphere for the application and actualization of the capacities developed in it during its life in the body" (p. 372).

Mc Dougall keeps at the front the idea of the soul, which recent psychology has preferred to leave very much in the background. At the conclusion of an exhaustive discussion he enumerates as follows the capacities which he thinks should be attributed to it: "We may, then, describe the soul as a being that possesses, or is, the sum of definite capacities for psychical activity and psycho-physical interaction, of which the most

fundamental are: (1) The capacity of producing, in response to certain physical stimuli (the sensory processes of the brain), the whole range of sensation-qualities in their whole range of intensities; (2) the capacity of responding to certain sensation-complexes with the production of meanings, as, for example, spatial meanings; (3) the capacity of responding to these sensations and these meanings with feeling and conation or effort, under the spur of which further meanings may be brought to consciousness in accordance with the laws of reproduction of similars and of reasoning; (4) the capacity of reacting upon the brain processes to modify their course in a way which we cannot clearly define, but which we may provisionally conceive as a process of guidance by which streams of nervous energy may be concentrated in a way that antagonizes the tendency of all physical energy to dissipation and degradation" (p. 365). These capacities he regards as the minimum that may be attributed to the soul. He holds his theory of the soul as "intermediate between these two extreme views, that, on the one hand, which denies to the soul all development, and therefore all that constitutes personality; and, on the other hand, that popular view which ascribes all development of mental power and character to the persistence of psychical modifications" (p. 371). The former is purely mechanistic. the other is purely spiritualistic.

It is not necessary, according to this view, to fall back on the theological belief in a special act of divine power in the gift to the individual soul of immortality. That is an assumption of divine "occasionalism" with regard to the world to come, which with reference to this world is supplanted generally in modern philosophy by the profounder faith in the divine immanence.

Additional force is lent to the reasons just presented, when we take into account the other character of personal being, which is involved—the self-affirming energy, or the will to live. We have to recognize a psychic power to control physical processes for its purposive use.

The personal dynamo is the will. The power-house of personal motivation and action is the psychical nature.

There is a normal dominance of the psychical over the physical in all right living; any subjection of the spirit to the flesh is a descent from the level of the human, a reversal of the motive power of character. Moreover, the ordinary psychical control of the physical for the daily conduct of life may on occasion rise to a superlative height; there is then an overmastering access of spirit with which the entire nervous system is quivering, and at times becomes so overloaded and flooded with power so sudden and overwhelming as to throw it out of intelligible vibrations; very much as a connection of telegraph-wires may become overcharged in an electric storm. At other moments the spiritual flame may seem to break out as a consuming fire, in which, if prolonged, the material frame itself must pass away in fervent heat. Often also has it been witnessed that the influx of spiritual energy, flooding the consciousness with light and power in view of some supernal truth or in the presence of some great duty, has given even to the weakest victory over physical fear and suffering; it has fused all the elements of being into a clear singleness of will, and held the whole body and mind obedient unto death in the endurance of a supreme devotion.

A critical psychological analysis of such instances serves to bring out distinctive spiritual marks impressed upon the physical habits in such control and use of the bodily functions. We do not refer to anything like alleged "stigmata" on the bodies of saints. No anatomical dissection of the cortical mechanism, indeed, or microscopical examination of nerve-cells, can detect any distinct physical signs of superinduced spiritual habits. From the physiological side, it is true, it may be noted in general that changes in blood-pressure and nutritive conditions accompany high or low pressure moments of psychical experience. Effects of bodily habits may also be apparent to a limited extent in structural changes. But

the call of the commanding duty, the presence of the spiritual vision, the birth of the new will, the possession of consciousness by the firm purpose which henceforth neither life nor death can destroy—all this dominance of the psychical leaves no structural mark of itself possible of detection on the matter of life in the body. No visible register remains stamped on the cerebral areas of the conversion of a soul, or of duty done through a lifetime, or acts of heroism achieved. Physiology cannot hope to distinguish between the brain of a coward and that of the brave man who died—the one in ignoble fear, the other in splendid sacrifice in the same trench. But in the more familiar as well as in the exceptional instances of man's spiritual ascendancy evidence is given from the psychological side of a natural power of mind to make matter subject to itself—a power the exponent of which must be to us a symbol of unknown dimensions. Mr. James once called the attention of professional psychologists to some of these dominant characters in an article on "The Energies of Men."[1] He commends to further critical study many instances which show that men ordinarily live below the limits of their psychical powers; that they rise above the average line to higher exercises of psychical energy, and exhibit surprising control of the nerve mechanism and habits, and that so-called mind-cures and some extraordinary instances of mental control and use of the psychical mechanisms may indicate a greater possible extension of the functional energies of men than we have as yet taken account of in our current psychologies. It is true that the highly organized system of the brain-cells and their connections may be structurally compared to a telephone exchange, in which there are so many wires, switches, common circuits, and also private connections. But there is functionally this striking difference: in the tele-

[1] *Philosophical Review*, 1907, p. 1.

phone system a call at one end is received identically the same as it was sounded at the other end in the transmitter; while, as has been said, in the connection between a sensory terminus and a mental perception it is as though a telegram went in at one end in German and came out at the other in Chinese. This whole psychophysical network is not even as a single chain of cause and effect, but a living network of interactions and intercommunications; it is held as a tissue of gossamer in the breath of the spirit.

Moreover, a searching examination of the phenomena of the psychical in the use of the physical discloses several particular characteristic features which have some significance in relation to the natural possibility of personal immortality.

1. One is the frequent inhibition of the habitual neural processes by a masterful psychical energy. A partial hold-up of a sensation under the predominance of an idea or mental excitation or determination is a quite ordinary experience. A sense of duty that has been built up into a firm habit of mind will act as an inhibition of certain nerve-reactions. It is as a dam strong enough to hold back a sudden uprising of fear which otherwise might sweep everything before it; in moral courage fear does not rise to the level of consciousness. In daily life the moral energy, becoming a psychical habit of action, will keep down manifold organic sensations and temptations of the flesh submerged in the unconscious. This power of the idea, this immeasurable force of the personal will, summing up in itself potencies, vitalities, intensities from the past, and the hope of the future, renders the entire character a reserve of moral energy; this is a man's supernal power to lay down his life and to take it up again. It is a prophetic sign that over him death can have no dominion, nor can such personal being see corruption. So by this sign of psychical power disciples

of old, who had seen Jesus, understood at last his absolute assurance of victory over death.

2. Moreover, a certain psychical power to regain impaired physical functions is indicated in various instances. This is not to be identified entirely with the physical capacity of restoring lost organs that characterizes some lower organisms, or with the restorative power of nature by which tissues are renewed and wounds healed; for some cases seem to indicate a more direct influence going forth from mind as a self-healing virtue, letting loose or directing to the needed work natural healing energies of the body. Much indeed in this field requires further investigation and discrimination before the range and effectiveness of psychical influence upon the neural system can be delimited, but that there is some stimulating, rejuvenating influence of mind over the bodily functions which may have further effect on the organic conditions seems to be indicated in common experiences.

3. Another confirmatory fact, which deserves more attention than it has received, is the psychical action evinced at the "growing point of mind."

Two states of nervous organization are distinguishable; one is that of the formed tissues, which have their functions structurally determined and which are capable of little modification. The other is that of the plastic nerve-tissue, which is still capable of progressive organization, and which in the acquisition of experience and through conscious effort may become determinate in worn channels or habitual patterns. It is with this more plastic nerve-capacity that the mental training of the child has to do. In a real sense the child, while learning by effort of attention and conation, organizes its own forming brain. Along the advancing line of mental growth, at the growing point of mind, the psychical and the physical interact, and the mental becomes the leading factor; the psychical gives direction and its

activity stimulates the formation of the neural habits. Conscious effort accompanies and conducts, although unconscious of its effect, the organization of nervous processes into fixed systems. "Wherever a new path has to be forced through the untrodden jungle of nerve-cells, there and there only is conscious effort, true mental activity, involved. Without conation there is no mental growth, and the stronger the psychical impulse, the desire and effort of will, the more effectually are the difficulties of new acquisition overcome; and an effect of all such processes, an effect whose degree is proportional to the intensity of the conation and the corresponding concentration of attention involved, is the organization of the nervous elements, the combination of them in fixed functional systems. . . . The relations are such as to imply that clear consciousness and conation play some real part in bringing about the organization of nervous elements, that the relations between conation or conscious mental activity and nervous organization are the causal relations."[1] We have, thus, this fact to start from: there is some formative power of mind over plastic matter which, after a prolonged evolution, has been fitted and is waiting in a child's brain to be organized and used by the growing child. This gives a firm point of departure for the speculative hypothesis that the psychical factor may have power to initiate a similar process in another environment prepared and adapted to its future development. This hypothesis only carries further out into the unexperienced life this active principle of life as already experienced. Nor does this speculative extension of present knowledge of the formative effects of spiritual conation contravene the law of conservation of energy within the physical world; it carries it on further as a principle of conservation beyond the known physical system. This venture of faith is not to

[1] McDougall, *Body and Mind*, p. 277.

be held up at the limits of present knowledge of psychical power.

Such possibilities of more subtle action and interaction between mind and matter, and of a far wider reach of psychical activity, are increased and even brought nearer future verification as science cautiously explores the unknown border-land of occult phenomena and finds indications of more ways and modes of communication between persons, both near and far, than we have hitherto been disposed to recognize. In this region little as yet has been definitely discovered; but all such phenomena can hardly be regarded as entirely imaginary. We need not for our purpose dwell upon the questions concerning the extent of psychic power which arise from telepathy, hypnotism, or from alleged post-hypnotic effects in modifying psycho-physical conditions; for, without entering into doubtful investigations, common facts of normal experience and thorough analysis of known psycho-physical activities furnish plausible warrant for the belief in a far greater power and reach of mind than we can measure. We go beyond demonstrable facts of experience, but *in the same direction* as these facts point, when we assume that the psychical may be capable of conserving from the dissolution of the body a potency that might be conceived as the germ-plasm of a new development and a further experience of living. This mortal body may prove to have been but the preparation for a better form of embodiment hereafter. There is an infinite suggestiveness in our immediate personal relations with nature through these bodily senses, and this suggestiveness of things to come grows not less but more significant the more deeply science is enabled to search into the relations of things natural and spiritual. The simplest yet profoundest truth of evolution waiting to be revealed may be this: "There is a natural body and there is a spiritual body. First that which is natural, and afterward that

which is spiritual." And the natural body may be the seed of the spiritual embodiment.

In view of such facts and conditions of self-sustaining and self-identifying life as have been adduced, there are two slightly variant forms in which the continuance of personal life may be conceived as a reasonable hope. (1) Both elements, the psychical and the physical, may be supposed to continue as a double potentiality of being: the physical, in some essential elements at least, being conserved in some transformation of its energy continuous with the psychical survival; and the latter, the spiritual factor, continuing to be as the dominant power of unifying life and growth in all the personal capacities and activities which in these earthly conditions had begun to develop. (2) We may conceive that the psychical entity, surviving the final failure of the nerve-system to act as its means of communication with the outward world, has in itself reserved power of adapting elements of nature to its self-maintenance in relation to the external universe, and that in ways beyond our apprehension the psychical energy, the permanent will to live, from conditions environing it after death or in the very act of dying, may form for itself another, more spiritualized embodiment—one which shall correspond to its psychical dispositions and be better adapted to its future existence than we now find in this perishable body of flesh. In this last conception, if it may be expressed in a single phrase, the spirit that is in man is the bearer in all its heredity and potentialities of the personal life hereafter. Death will thus be deemed a new birth, and the spiritual body that shall be conceived as a new attainment, or a more or less gradual process of embodiment. The first conception is the more generally accepted idea. Not only has it obtained in the crude animism of primitive superstitions, but also notions of the world of spirits are still prevalent in which some shade or ghostlike appearance

of the body is imagined to survive and to manifest a certain attenuated existence. In some earlier Christian conceptions of the resurrection, the material elements of the body were assumed to be gathered by the divine power and reconstructed in the semblance of their earthly form. More in accordance with the analogy of the seed, the body which shall be has been conceived as a spiritual form arising in newness of life from the body that returns to dust. There is nothing, as we have maintained, in our limited experience of spiritual potencies and of the ultimate structure of matter to forbid this reasoning from analogy, or to warrant us in putting the *non possumus* of our ignorance against any evidence, should any credible demonstration ever be given of such semi-spiritual appearances or communications through material manifestations. For all our scientific presumptions, we could believe in ghosts, if we ever should see one. Those who incline to the opinion that the investigations of the Society for Psychical Research indicate something more than telepathy, may consistently accept the theory that disincarnate spirits are capable imperfectly at first of rehabilitating themselves in material forms and momentarily appearing, of subjecting at least to their *use* some more subtle means of sensible communication with this world; while others who do not find convincing evidence of spiritual agency in such alleged phenomena are inclined to admit that some power of thought may pass from mind to mind along lines of force which at present we do not understand, and even that such impulses may pass also across great distances of space—a mode of action, this, which is named but not known when we call it telepathy.

This theory of personal continuity and its evidence in some materializations that may become evident to our senses, is not indeed contradicted by any known necessities of natural law; but it is burdened with moral

as well as metaphysical difficulties. In materializations of supposed spirits there seems to be left too much of the opposition between the flesh and the spirit. But the ultimate spiritual problem of personal being is not solved; it would only be postponed by such manifestations of dual existence. The alleged spiritual manifestations are usually too grossly materialistic, too unintellectual and meaningless. Communications through such mediums do not serve to spiritualize matter so much as they seem to materialize spirits.

The second form of statement suggested above requires less of subsidiary hypothesis in the effort to think it out. Moreover, such facts of psycho-physics as those already adduced, fall easily into line with this view, and some analogies to be drawn from the general evolutional conception lend to it speculative distinctness and credibility. It is quite in accordance with common sense to regard the psychical factor as the efficient cause, and the neural system of the body as the conditional cause of consciousness. It may further be granted, that, unless all interaction between body and mind be denied, the psychical factor may not only impress its influence upon the cerebral organization, but also on the aptitudes and habits, in short the whole complex of experience, in relation to the external world, which is acquired through the physical organism. And in turn the psychical power may receive in itself the impression of the physical, both influences being interfused in the permanent content of selfhood. Thus the psycho-physical dispositions and habits, which have been fashioned and enriched through the struggles, the joys, the sorrows, the victories of this life, may constitute a self-recalling and identifying memory in the future life. Further the same conation or will to live, strengthened, matured, victorious even in the act of dying, may have inherent power to form and organize other and fitter means of living, under changed conditions,

in communion with the worlds of persons and of things hereafter. Our present senses are now not perfect enough to know even as we may be known.

A biological analogy may serve to illustrate, to render perhaps somewhat more visualizable, this speculative idea of personal immortality. Biologists distinguish in the genesis of an organism two kinds of cells, the germ-cell and the somatic (bodily) cell. The former is the bearer of life; the other is laden with the material of which the body is to be built. The germ-cell contains within its microscopic littleness the hereditary characters; it transmits the specific and individual determinants of the organism that is to grow and win its life in adaptation to its environment. The organism does not, as was formerly supposed, exist in miniature, preformed in the egg; but its somatic structure and its development are predetermined in the germ-plasm from which it has its origin. Now all material analogies break down at some point when we would carry them over into the realm of the spiritual; but somewhat similar, it might be said, is the relation of the psychical, which has in itself the potency of the future life, to the body that shall be hereafter: viz., the relation, as it were, of the psychical germ, which has in itself the intrinsic potency of development both spiritually and somatically into the full perfection of the embodied personal life hereafter. In this manner both memory and personal identity would be conserved; for, if in present experience a sensory stimulus is a clew sufficient to set consciousness on the trail of a past succession of ideas, and an idea is likewise an impulse sufficient to set off a complex of sensori-motor impulses, it follows that it is not at all inconceivable to think that death may not go deep enough into the essential elements of our being to break up this vital unity—it may come not to destroy but to fulfil the profoundly intimate associations of these two, the natural and the spiritual,

in personal being—each shall not be made perfect without the other.

Putting aside, however, such aids from imperfect analogies, a tenable ground is gained on which a reasonable hope of immortality may rest, and from which imagination, if one pleases, may take wing, when this conclusion is attained;—in the reciprocal interaction of mind and its embodiment, and in the formation of the one in the habit and mould of the other, continuance of personal identity may be maintained, both subjectively and objectively, unless indeed we are not compelled for other reasons to lose all confidence in ourselves as real beings living in a real universe.

Continuing our approach to the question of man's destiny from the nature side, there remain for us some further facts and tendencies which should receive more distinct notice. We have been reasoning thus far chiefly concerning the natural possibilities of our personal survival under other conditions of existence. The probabilities of some future development and perfecting of personal life are enhanced when the foregoing considerations are subsumed under the law of conservation of values in evolution. This requires careful elucidation. The principle of conservation of values is one of great importance in the philosophy of evolution, although it has hardly been formulated, as it should be, in current discussions. The fact needs to be emphasized that, besides the conservation of matter or energy, there is conservation of values to be observed as a fundamental principle of evolution. Evolutionary progress, as we have already observed (p. 174), is to be measured on a scale of vital values, and both extensively and intensively as environment has been increased in value and as the sensitive response of life has been better adapted to its environment. The maximum value of life, both in ex-

tent of available environment and in intelligent possession of it, accompanied by the feeling of pleasure, is attained in the age of man. As measured on the scale of vital values, a principle of conservation pervades the entire course of evolution. Values which have been struggled for, lost here and gained there, when at last won are made the means of further increase of value, of higher and richer attainment of life. Nature is a faithful steward, and does not fail to gather interest on her investments; nor does it sacrifice the principal: periods of apparent loss or times of apparent waste of capital prove eventually to have been preparation for larger operations and increased returns. The losses are incidental; the gains are permanent. The geological ages show increased vital values to nature's account, as their books have been opened by science and returns compared. This is true not only of the materials for the use of life, which have been stored up during successive ages in the earth, but also it holds good of the advance in the differentiation of organic forms and the fitness of successive species to make the most of the environment. We may well think, therefore, that this law of conservation of vital values is not limited within the confines of the present age of man, but that it has some prophetic signification for further and higher development of life in the world-age to come. We may trust nature not to become suddenly a spendthrift of all the wealth laid up by the ages past. We may trust the God of nature not to break faith at last with human hearts. We may follow further the interpretative significance of this principle, and estimate the force of it in some of its more important applications.

1. We would dwell first upon the vital value of the body to the mind. We should estimate fully the great worth of embodiment to the spirit in our experience of both.

The poet-philosopher Herder caught in a fine phrase a rich thought when he said: "Embodiment is the end of all God's ways." An embodied spirit is the natural end of creation. The work of God from the beginning has been a work in both kinds, matter and spirit, and it cannot be conceived as finished in anything less than this—the consummate perfection of both in their perfect fitness for each other in the unity of the personal life. Not spirit alone, not body alone, but mind and body of twain made one—spirit in sensible communion with nature—the outward world attaining its end in the mind's appreciation and delight in it—this, and nothing less desirable and complete than this, is the evident fulfilment of the creation. Reflect at what cost these bodies have been prepared for us. Innumerable ages have been spent in lifting the body to its present high estate, in fashioning the material elements into this human form and comeliness. Consider the priceless value to the inner life of this sensitive and perceptive embodiment of spirit. All nature without us, the divine thoughts objectified and rendered visible in the outward world, the language which day uttereth unto day, and the glory which the heavens declare, and in our homes the faces of friends—all these were the gifts of God to man when spirit was given a body, when according to the simple, profound symbolism of the first chapter of Genesis, God finished his work, and, behold, it was very good. As we read the natural history of the growth and perfecting of our senses, how, for example, the ear has been formed and attuned to all melodious sounds, or how from mere pigment spot of sensitiveness to light the eye has been developed, we may rejoice exceedingly because we have come to ourselves not only as living spirits, but as spirits having ears that we may hear and eyes to see. How unthinkably lonely and empty would a soul be without such means of communion with the outward world, shut up within itself! Another

truth, closely following this, will lead us a step further in the natural prophecy of immortality.

2. Some embodiment must be of permanent worth to the spirit. As it is an attainment of inestimable value to mind now, so it is not to be destroyed, but to be fulfilled in the kingdom of heaven. Embodiment has worth for spirit now in two ways—for unity with nature and for communion with persons. In both these directions, therefore, personal life must be conceived to go on, if it is to be made perfect. In both it must rise to happier fulfilment, or fall back into vacuity and perish. If the body is experienced to be a gift of real value to our inner life, then it is to be esteemed as a gift not to be recalled. If, now, some body—it may be as yet a rudimentary and imperfect body—has become of service to mind in enlarging its communication with the outward world and in the mutual recognition of friends, then some bodiliness will always be servicable to mind; and after this brief earth-time the spirit in man may expect to find its capacity for embodiment remaining undestroyed, and to enter into some future embodiment more subtly organized for its motion and vision in the life beyond.

3. Such continued relations of the personal being through some embodiment with the world of persons and things is essential further to its perfect individualization; and this likewise is a principle of nature, as we have seen (p. 177), which we must assume as reaching on to perfection hereafter.[1]

4. Another character of the present body should be distinctly noticed to render this hope of personal life hereafter complete: viz., its present unfinished character. Its adaptation to spiritual uses has been carried a great way, but it is not yet made perfect. This has

[1] As these aspects of the future life have been more fully discussed in a previous volume of the author, *Modern Belief in Immortality*, I would refer to that book without dwelling on them here.

been implied in what has just been said. Although the human body is the consummate organization of atomic matter for the use of mind, nevertheless we are by no means come in the flesh to the end of conceivable adaptations of the physical to the spiritual man. Mind has thus far made a good beginning, but it may prove only a beginning in its organic control of material forces. Thus the original vague sense of touch has developed into the fine sense of taste, the discriminating sense of sound, and the localized and clear sense of sight. But no sense goes as far or reaches so high as thought may imagine it to be carried. We might receive with immediate perception the now ultra-visible rays; we would apprehend with more demonstrable directness the all-pervasive ether in which all things exist and which is in all things. Nor need we enlarge upon the partialness of our present control of the elements which are transiently made subject to us in these mortal bodies. These vital elements come and go—ours to utilize for a day's work, in pain escaping from our mastery, and in the end breaking loose from our will to live. But just at this point, where our embodiment seems brought to a pause, where mind seems to receive a final contradiction from matter and life is denied by death, hope finds a further prospect opening before it, and faith in immortality may take a new departure. For we have this reassuring knowledge that this mortal body is by no means the final conceivable perfection of embodiment; other obedience and better-organized service to spirit of material forces may with reason be supposed. Both from the comparative perfection of the human brain in relation to all previous organization of matter for mind and also from its imperfection in relation to a conceivable future, we may gain a prophetic insight into the significance of the present for the future embodiment of spirit. If, indeed, we were forced to assume that in known physics and chem-

istry the end of all matter in its possible fitness for mind had been reached, then a halt might be called to our faith; but we have not come to the end of the science of material energies. We have of late been beholding new revelations of radiant energies. What latent energies are yet to be revealed out of the depths and silences of space, who can tell? We who are just beginning to learn how much farther the Creator has gone with radiant matter than we had dreamed cannot presume to say that he can go no further either with it or us.

5. A significant side-light is thrown over this inquiry from the knowledge of the service which death has rendered in the natural evolution of life.[1]

In some unicellular organisms (*paramecium*) several years ago it was found that several hundred generations of cells which multiply by division could be produced without the occurrence of any dead cell. Death, that is, was found to be not at first a natural necessity. Since then recent experiments have continued this succession of unbroken cell life up into the fifth thousand, and at last advices the succession was still being continued; it apparently may do so indefinitely provided the nutriment is kept suitable for its maintenance. It is thus demonstrated that there is in elemental life a natural immortality, or capacity of indefinite continuance under favorable conditions, unless prevented by some external accident. More than this, it is known that death occurs seemingly naturally as life reaches toward a more differentiated state; death seems to be a condition required for the more complex organization and variation of the matter of life. Death comes in for the sake of life more abundant. The natural law of death may be subsumed

[1] I have discussed at length this aspect of the subject in a book entitled *The Place of Death in Evolution;* as the natural uses of death for life should not be passed by entirely, I state in substance the leading idea which was developed in that volume.

under the law of natural selection. "We may sum up in one general statement the facts, and the direct suggestions of the facts, which recent biological research brings within the reach of our reasoning. We find that death has many uses in the economy of nature; that it is indeed so useful that life itself has called forth death to help it forward on its endless way. We discover that natural death is only in appearance an enemy; that in reality it is a servant and helpmeet of life. One might go so far as to assert the seeming paradox that, if it had not been for the early entrance of death, life itself might not have risen to its full potency, and in its best and fairer forms it could not have continued to exist. In consequence of death, life develops, and the ministry of death is throughout a service for life—for the increasing fulfilment of life's promise, and for the greatest possible variety, richness, beauty, and universal joyousness of life. The one regnant, radiant fact of nature is life, and death enters and follows as a servant for life's sake.[1] When this natural function and service of death shall have been accomplished, shall death itself, as no longer useful, cease to be? It is in accordance with the habit of nature to discard whatever becomes useless as a means of advancing life; useless organisms in time become atrophied. It is in harmony with this law of nature to hope also for the final discharge of death. When shall death cease to reign? The answer thus suggested from what is known of the place of death in evolution is: When life can better go on without it, but not till then. Its work for life accomplished, it shall have no more dominion over us; we may look for the final discharge of death."[2]

[1] Smyth, *Place of Death in Evolution*, p. 43.
[2] *Op. cit.*, chap. IV.

II

We have gained thus far broad ground in nature for belief in man's survival-value and the possible continuance of his life in all its essential energies hereafter. In previous chapters we have also observed that in Christ personality was manifested in its highest power; in him the natural was spiritualized, the human made partaker of the divine; and this in a measure so full and in revelation of life so luminous that its influence abides to this day as the light of the world. As we are thinking of the future life the further inquiry opens before us, how far his personal life illumines the way of thought we have been pursuing, and whether the hope of everlasting life, which his disciples received from their assurance of his power to overcome death, shall prove the fulfilment of the values which render a man's life worth living forever. In other words, does the Christian hope of immortality run as a break across the course of nature, or does it carry straight on and toward some consummate issue the way of life already known and rightly loved by us?

To meet fully this inquiry two questions arising from the natural order which we have pursued must be put to the Christian faith in the resurrection-life. First, it is to be asked whether in the historical data (which criticism may accept as trustworthy) there are indications of Jesus' possession of a superhuman, or at least unique, degree of spiritual power to control physical forces. If signs appear of unusual spiritual force in him to put nature into subjection to himself, these signs would confirm the evidence in ordinary experience of the dominance of the spiritual factor, and would render still more probable the reach and effectiveness of such power beyond our present knowledge of its possibilities. Faith in our own personal power to overcome death would be confirmed in proportion to the assurance that the Christ

had power to lay down his life and to take it again. For the purpose of determining this we need not shut our reasoning up in the dilemma either of believing in the maximum claim of miraculous force, which may appear to be accepted in the extant narrative of Jesus' mighty works, or else of disbelieving that anything of the kind actually occurred. For a minimum of superior power over natural processes, if possessed and exercised—any degree of it sufficiently distinct to be apprehended as such—would be enough to serve as collateral security for the validity of our ordinary experience of the indwelling energy of the Spirit and its effectual working outward among the forces of nature. So far as concerns this point, one may be quite willing to accept the severe test of faith which Lessing stated in his famous principle of rational scepticism: "Accidental truths of history can never be the proof of necessary truths of reason." [1] For in this connection rationalism has no necessary truths of reason to interpose as barriers against credible experience of spiritual power in the natural world. On the contrary, necessary truths of reason require us to trust human experience up to its farthest ascertainable limits, and within the scope of experience to assert that nothing is impossible which is not self-contradictory. Some mental dominance and directing control by the personal will, as we have seen, is known fact of psychophysical activities. We have to do with the extent and limits of it in our practical psychology. This is not an inference to be gained from a necessary truth of reason, but a knowledge to be obtained empirically through experience. The initial question, therefore, concerning the miracles of Christ of direct significance at this stage of our inquiry is not whether he did just what he is said in the Gospel narratives to have done, or all that it is narrated he did; but whether he did *something* which

[1] In his *Proof of the Spirit of Power.*

his disciples saw to be beyond their known spiritual powers, and which, as witnessed by them, is enough in evidence to raise our trust in the efficacy of the Spirit to any degree above the common experience of its working. Claimed as evidences at the maximum of the narratives, some miracles of the New Testament for many minds render belief difficult in the credibility of the accounts; other works of Jesus, which are regarded as rising, though in a less degree, above the line of general experience, seem not incredible, and they confirm our spiritual experience while they transcend it. They do so because they evince more of the same kind of power, and extend its influence further along the same line as our experience of the effectual working of the Spirit. That a certain degree of such superior spiritual dominance was possessed and manifested by Jesus may be said to be the generally accepted testimony of modern historical criticism. It is seen to be impossible to reduce the Jesus of the Gospels to the dimensions of a common man. And the Christ in history is a supernal power. Some virtue went forth from him that the woman felt, and that caused his disciples to wonder, and to believe in him. Some power he had over demoniac dispositions that led the people to bring their worst incurables to him. Some calm, personal superiority he manifested in the midst of the stormy sea, such as brawny and brave Galilean fishermen, seasoned as they were to the winds and waves, had never seen in all their buffetings with the storms that swept across the lake of Galilee. On the face of these Gospel narratives lies the impression of Jesus' unique personal power. It was that commanding personal power which bound his immediate disciples to him in a following that even his death could not destroy. The mighty works, which are related with such clear simplicity, so naturally that while we read we can hardly help believing them, when taken even at their

minimum historical valuation bear witness to the immense impression which the brief lifework of Jesus made upon men who were eye-witnesses of his miracles—an impression which time has not been able to efface. If taken at their full spiritual significance, as evidences of the unique spiritual personality of Jesus, they attest and confirm faith in the power and possibilities of the spirit in man, which was given beyond our measure in him; for, more than the signs which he wrought, above the miracles, it was Jesus himself, in the glory of his person, who made apostles of disciples; Jesus himself, in his abiding influence and the demonstration of the power of the Spirit of God in the Christ among us men to-day, is for us the evidence of things unseen, the substance of things hoped for. However we may seek to explain in accordance with our light his mighty works, the fact is indisputable, and it is supreme, that the Gospels have set in permanent lines, clear, real, ineffaceable, the person of Jesus himself. His glory, glory as of the Father, abides in all our ideals. History can never lose the revelation of that Life, the image of that Divineness, the power of God in the transfigured Man.

For us, then, pursuing as we have been this way of interpretation of the long course of nature up to the advent of man, and the significance of his life, the culminating evidence of the immortal worth of personal being, beyond all other signs that have led us on, is the person of the Christ; even as he has left for all men his inner assurance of the eternal life: "I know whence I came, and whither I go."

Man's consciousness of immortal being, which was realized to the full in Jesus' self-consciousness as the Son of God, has been the inner assurance of countless minds in hours of deepest insight or moments of highest endeavor. This consciousness of living after the power of an endless life is a fact of Christian experience—a lumi-

nous fact as positive in human experience as is a star in the sky. It is an ultimate result of Christlike living, indestructible, repeated, confirmed, verified in the fellowship of an innumerable company of witnesses. Whatever else, then, may be but partially known of the historical Christ, this is certain: He created his disciples' faith in the resurrection-life. From him has come the world's Easter hope. Something in their personal knowledge of him had power to change for them his death into full assurance of his continued life. And that faith which Jesus created in them has been a spiritual energy, overcoming the fear of death, and transforming memory of sorrow into hope of joy in human hearts through all the generations since. Such power to radiate into a world of death the gospel of immortal love is one of the great forces known to man; there is nothing in the physical universe to be compared with it unless it be the ethereal energy in which we see light. If we search with critical eyes to discover how the person of Christ created in his disciples this mighty faith—the greatest of his mighty works—we shall have to look farther and deeper than to their testimony concerning the empty tomb. How could they themselves believe in that? It was contrary to all their experience of death. Peter, in that first preaching of the gospel of the resurrection, has given the answer. It was not contrary to their experience of *Him*, that he should be raised from the dead. Peter affirms that they were witnesses that God raised him up; and they themselves could believe what they were witnesses of, because in their knowledge of him it was not possible to believe that he should be holden of death. Through their knowledge of the power of God in his life, his continuance in death had become to them inconceivable. In our sense of utter loss we may ask of those who have left us: Is their life still one with ours? His disciples, thinking of his life, remembering him

from the hour when he first had called them and they left all and followed him, and what he had shown himself to be even to the end, said to one another: "It was not possible that he should be holden of death." This great reversal of belief, this denial of death and affirmation of life—his continuance in death inconceivable, his continued life only conceivable for him—this is the very substance and energy of the disciples' faith in the living Christ.

The two constitutive elements of the first disciples' resurrection-faith—some reappearances of the Lord, of which they declare they were witnesses, and the assurance that he could not really die—appear distinctly set forth in the first records of the apostolic preaching. Later on, as they live in the hope of the resurrection, their spiritual experience of the Christ outshines even the sensible evidences of his resurrection of which they were eye-witnesses. Especially as this hope is taken up in the powerful conviction of St. Paul, the Christian faith in the risen Lord has in it the assurance of the living presence and power of his spirit. The faith of the apostles is their abiding consciousness of God in Christ, and the final evidence of it is their vital experience of his quickening spirit. They were living their lives in the power of his life; more blessed they, though they see him no more, because henceforth they walk by his spirit, and they know him now as they had not known him when he walked with them in Galilee. So to the Apostle Paul the resurrection-life became as natural as the upspringing of the grain from the seed and afterward the ripening of the full-grown ear. What else, what less, should be expected for persons who are made partakers of the divine nature, who are heirs with Christ of an incorruptible inheritance, who in their fellowship with his life have come to know themselves as the children of the light, the children of the resurrection?

It is characteristic of the profound realism of the apostolic experience of the eternal life that in Paul's great chapter in the Epistle to the Corinthians the resurrection of Christ is represented as an illustration and evidence of a universal law of resurrection. The fact that Christ is risen is not viewed as an isolated and entirely supernatural event, but as the first-fruit of the resurrection of the dead. It is a revelation of the order of God's purpose—first the natural, afterward that which is spiritual. So the apostle subsumes faith in the risen Lord under the general law of the resurrection-life: "But if there is no resurrection of the dead, neither hath Christ been raised."

Of Jesus' teaching concerning the life after death his own saying is true: "My words, they are spirit and they are life." These two characters separate his teaching concerning the world to come from all the prophets who were before him, spiritual simplicity and personal vitality. His words of the future life are simple as personal friendships, and vital as love's assurance of itself. They are expressions of his consciousness of living always with God; and his promise of the hereafter to his friends is given them in personal terms: I will come to you—a little while and ye shall see me—we made perfect in one. Herein is no imagery of earth used for heavenly things, no symbols of temple, or city, or light of the sun, or splendors of color as of all manner of precious stones; but simply, and with no shadow of our sorrow or questionings of our hearts passing over the clearness of his consciousness of the life eternal, Jesus gave to the world his personal revelation of personal immortality. Henceforth those disciples that knew him best bear witness of him and say: "Now are we children of God, and it is not yet made manifest what we shall be. We know that, if he shall be manifested, we shall be like him, for we shall see him even as he is. And every one that hath

this hope set on him, purifieth himself, even as he is pure."

We have thus answered partially the second question, which, as was observed, modern psychology puts to faith in immortality: viz., What reasonable idea of possible future life for us can be conceived? Moreover, we have indicated that the assurance of this faith is reached as one enters through the door of possibility which natural science opens and no knowledge can shut, and, passing beyond the probabilities of the historical testimony to the appearances of the risen Christ to his disciples, penetrates into their innermost and unquestioning conviction of the power of God in the supernal person of Christ to put all things, death itself included, in subjection under his feet.

We have consequently no need, at this point of the long course which our inquiry has traversed, to turn aside to consider in detail the historical data on which the belief of the early apostolic fellowship and tradition rested, that Jesus was risen from the dead. We may leave to critical Biblical scholarship the further searching of the historical sources of this belief which after Jesus' death took so firm and sure possession of the minds of the early Christians, and in which they overcame the world. The apostles' witness to what they had seen and heard has its evidential value primarily as the reason for their own belief, a belief that changed the whole world in their eyes; it is secondary evidence to us who have not seen. The lengthening distance between the present time and their age leaves in the shadows of the ever-receding past many things that we would know to render their declaration of what they had seen faith-compelling to our modern unbelief. For the modern mind the question has shifted from that of the historical credibility of their witness to the risen Lord to that of our interpretation of their testimony; how in the light

of our present knowledge shall we understand the appearances to them of the risen One? It raises a partial and misleading issue merely to say of the miracle, "It never happened"; the real and larger question is, what place and value does the seemingly exceptional event have in the total complex of our present experience of ourselves and our world? If it fits into that totality of our thought; if it throws a single beam of light into the felt mystery around us, and in turn is itself illumined and understood in the reflection of all our knowledge; in that measure does it gain intelligibility and hence possibility in some manner as fact, and to that degree, both confirming and itself confirmed, does it become part and substance of a rational faith—a faith the full assurance of which is not derived from the testimony of others merely, nor from sensible appearances only, but from its very presence in our consciousness as an immediate element and factor in the whole organized complex of our personal experience.

III

We have thus far been considering the hope of immortality from the natural side, as life attains its highest value in the Son of man. We have not as yet dwelt specifically upon the moral values and religious ideals of the inner personal life. Upon these almost exclusively the emphasis has been laid in philosophical and religious writings, of which many have been written concerning immortality in recent years. The moral nature, it is said, is itself an explicit expectation of life beyond this preparatory stage; its development requires, and its end will not be attained unless there shall be for it another opportunity of life. This reasoning can hardly be better put than it was in Isaac Taylor's once notable book, *A Physical Theory of Another Life:* "It is among the moral sentiments and the intellectual faculties, that is

to say, within the circle of the proper consciousness of man, that we ought to find, if at all, the indications of a second birth, and of a new economy of life. Now, all that has been said and that may be said—and it is not a little, in illustration of the theorem of the immortality of man, as foreshown by his moral sense, by his expectation of retribution, by his aspirations after a better existence, by the vast compass of his faculties, and by his instinctive horror of annihilation—all these prognostics of futurity, and if there are any other, are capable of being condensed in a single proposition, setting forth the fact—a fact the mere statement of which contains virtually a demonstrative proof of the principle it involves, namely—That the idea, or the expectation of another life is a constant element of human nature or an original article in the physiology of man."[1] He reasons from the analogy of metamorphoses in insect life as follows: "If an animal—an insect—the history of which at present we know nothing of, is observed, at a certain season of the year, to abandon its usual haunts . . . if it is seen to be employed in a manner which has no utility whatever in relation to its present mode of life—in such a case we infer, without a shadow of doubt, that the creature is following a sure leading of nature; nor should we deem anything much more unaccountable or monstrous, than to find that all this forecasting of futurity, and all these prudential operations came to nothing, and that the deluded insect, instead of awaking in gayety from its transition-torpor, had utterly perished, and that its dust had been irrevocably scattered by the winds. What sound principle of philosophy, then, forbids our looking at the human species as the chief of the terrestrial tribes, and then inferring that the sum of human instincts, impressions, expectations, and opinions (taken at large), constituting as they do the elements

[1] *Op. cit.*, p. 168, ed. 1849.

of our constitution, the parts of our nature, are to be held infallible indications of what awaits the species, and as physically prophetic of its destiny? Our present argument is reducible to a very few words, or to a syllogism that contains its own demonstration. Man, we affirm, is to undergo a metamorphosis, and is to pass on to another stage of existence—because, by the constitution of his mind, he expects to do so."[1]

This reasoning, it is to be observed, is not founded upon mere desires or opinions of individual men, but upon the constitutional wants, the structural characters, the specific preparatory and premonitory habits of the human race; the moral argument is "the condensed value of human belief." "To impugn, then, the doctrine of immortality, or of another stage of existence succeeding the present, is to find a species, marked in the most distinct manner with the indications of a future transformation, and yet to affirm that no transformation actually awaits it."[2]

This passage was written before the time of Darwinism; we know now much more definitely the circle of life changes which were then observed as metamorphoses in a few conspicuous instances. Does the evolutionary account of them break the principle of reasoning involved in this pre-Darwinian syllogism? In other words, do we have in these transformations of animal life merely an illustration that may serve to aid our imagination of some future transformation of our life; or do they constitute a real analogy for a reasonable inference concerning a future stage of existence for the human species? We follow out a real analogy only when we first discover some principle obtaining in one sphere, and then observe similar conditions in another sphere amid which an assumption of the same principle may seem to be a working-hypothesis. Much scientific reasoning and experi-

[1] *Ibid.*, p. 169. [2] *Ibid.*, p. 172.

mentation follows this analogical method, as for example, the analogy of wave-motion in successful working-theories of light and electricity. Is this reasoning, then, from biological transformations, and the predictive value of acts, instincts, habits, that have no immediate utility, an analogy disclosing a principle or law of life that may be transferred and used in the interpretation of our personal life; and in a similar manner may we infer that our moral conduct, intellectual processes, and spiritual ideals look forward to some other stage of existence? We may hold that the analogy is a true principle by means of which we may apprehend better the meaning of personal life; we may esteem these similar preparatory activities and anticipatory ideals of ours as intimations of immortality; unless, indeed, all these higher instincts and constitutional moral dispositions of human nature and these spiritual aspirations can be entirely reduced to the same level as animal utilities, and their sole occasion be found in vital responses to sensible stimuli. But just at this point we are confronted with the dilemma that these higher habits and activities are of doubtful value for the most efficient adaptation of the human species to its immediate habitat. They often are directly prejudicial to it.

How much suffering and sacrifice, what waste of the best life, to say nothing of the immense diversion of human effort from the practical work of conquering the earth, have not the forces and imperious needs of our higher life occasioned? These idealistic elements might with physical profit have been sifted out through natural selection. Some men would cast them behind in the ethics of future prosperity for the nations. Our religious ideals, so often at war with immediate and material interests, should have been left by the way in the progress of civilization, our useless hopes of immortality forgotten, if they have no real meaning and future worth. But they

have not been lost. No selective survivals of the generations have atrophied man's religious nature and hope. Human reason, in spite of all immediate utilities, will still "hold commerce with the skies," man will continue to "hitch his wagon to a star," and human hearts will keep on loving in the hope of living forever. Scientifically these things ought not to be so, unless there is a greater reality for us to be manifested—"it doth not yet appear what we shall be."

There is a noble but minor note as of forced submission in the modern doubt whether a future life is to be desired. This note runs through these words of a strenuous intellectual sceptic of our time: "Not only the earth itself and all that beautiful face of nature we see, but also the living things upon it, and all the consciousness of men, and the ideas of society which have grown up upon the surface, must come to an end. We who hold that belief must just face the fact and make the best of it. . . . Our interest lies with so much of the future as we may hope will be appreciably affected by our good actions now. Beyond that, as it seems to me, we do not know and we ought not to care. Do I seem to say: 'Let us eat and drink, for to-morrow we die'? Far from it; on the contrary, I say: 'Let us take hands and help, for this day we are alive together.'" [1] It is not surprising that under the oppression of the belief which science seemed to him to render inevitable, Professor Clifford should seek to maintain the worth of life by proceeding to deny the value of the desire for immortality. "First," he writes, "let us notice that all the words used to describe this immortality that is longed for are negative words; immortality, in-finite existence. . . . Longing for deathlessness means simply *shrinking from death.*" He will feel no positive attraction in "the shadowy vistas of eternity." . . . "Not only is it right and good thus to

[1] Clifford, *Lectures and Essays*, vol. I, pp. 265–6, ed. 1902.

cover over and dismiss the thought of our own personal end, to keep in mind and heart always the good things that shall be done, rather than ourselves who shall or shall not have the doing of them, but also to our friends and loved ones we shall give the most worthy honor and tribute if we never say nor remember that they are dead, but, contrariwise, that they have lived, that hereby the brotherly force and flow of their action and work may be carried over the gulf of death and made immortal in the true and healthy life which they worthily had and used. . . . But for you noble and great ones, who have loved and labored yourselves but for the universal folk, in your time not for your own time only but for the coming generations, for you there shall be life as broad and far-reaching as your love, for you life-giving action to the utmost reach of the great wave whose crest you sometime were."[1] So the low, sad note of humanity is heard through resignation so noble. But is this all of the personal longing for immortality? To have been for a brief moment at the crest of the great wave—is that all of the "life-giving action," for which the powers of human nature have been marshalled: is this all the noble ones at the height of their love and labor for the universal folk have attained of life and immortality? Not so thought the Man whose love was the most far-reaching.

These words, immortal, infinite, are negative words, as Clifford says; but they deny the limits of this present life that they may bring out the great positiveness of that Life which is life indeed, which is not subject to the negations of the present world nor destined to end in death. Man will work, and think, and dare to love as being himself worthy of conscious part and abiding-place in the universal life, himself one with those who are to be remembered as having lived, and not to be thought of as dead; and with those who shall in coming years

[1] *Ibid.*, pp. 270, 273–4.

live worthily; for our God is not the God of the dead, but of the living; and all live unto him. Truer far to the life which without thought of death is now "to be counted as a good and healthy thing" is Whittier's song of life's autumn time, "My Triumph":

"And present gratitude,
Insures the future's good,
And for the things I see
I trust the things to be.

"That in the paths untrod,
And the long days of God,
My feet shall still be led,
My heart be comforted.

"Parcel and part of all,
I keep the festival,
Fore-reach the good to be,
And share the victory.

"I feel the earth move sunward,
I join the great march onward,
And take, by faith, while living,
My freehold of thanksgiving."

All is not thus said concerning the meaning of man's constitutional desire, his organic thirst for continued personal life. It is mistaken psychology to regard it as a desire merely, a hopeful thought, a prayer only of the human heart. At the core and substance of its persistent strength there is another element to be reckoned with: it is *the will to live.*

Here the positive idealist has right to enter with his affirmation that the will to live as an individual is one of the final unanalyzable elements of human reality, and there is no reality on earth or in heaven above unless human individuals are real beings; unless their world

of purpose is real. In philosophic thought concerning the destiny of man we have to do, not finally with the brain that a blow may disable, or the muscle of the heart that may suddenly fail to pulsate, or the vital breath which a microscopic germ may take from us—these are the lesser and more superficial aspects of reality. We have to do with an ultimate of being and an elemental energy, in and by which man lives and has his being. In all human experience there is nothing more fundamental, more irreducible than the individualizing personal will to live, and to be an end to itself in a realm of ends. In other words, personal individuality is the last meaning of man's nature, and the final meaning of us is the real meaning of things. This is the steadfast assertion of Royce's idealism—the realization of the meanings of our individualities is the whole meaning of the world. "I know only that our various meanings, through whatever vicissitudes of fortune, consciously come to what we individually and God, in whom alone we are individuals, shall together regard as the attainment of our unique place, and of our true relationships both to other individuals and to the all-inclusive Individual, God himself . . . I wait until this mortal shall put on—Individuality."[1]

Something more is involved in this than the idea that the individualizing will has a meaning of its own which is not to be merged in the meaning of the world as a whole. The individuality which "now we seek" is a glimpse, a hint, in our best moments a felt beginning of "our true and final individuality," which is to be attained by each of our various lives in its own unique place in "the oneness of the Absolute Will," in the "harmony of the divine life." Such is the supersensible value which the idealistic philosophy assays as in the ultimate analysis the pure gold and essential worth of human nature.

[1] *The Conception of Immortality*, p. 89.

Moreover, this significance of the will to live should also be observed; this will is a fact among other facts, an energy among other energies of nature. Personal individuality is a power in relation to other powers of the universe. As such it is not to be put aside as so much metaphysical hypothesis; it is something to be taken into the account in the philosophy of nature. It must be estimated at its full worth on the scale of natural values. All the transformations of energy, the action and reactions of the forces of the universe, are not to be fully comprehended if this energy of will which we know best of all is ignored.

These reflections leave us at the very verge of the chasm of death in the midst of life—that awful inevitableness in which all the ways of life seem to end. Through its fathomless abyss no eye may peer to discern the reascending path, or catch momentary gleams of heights beyond. But not without inner insight, and hope farther-reaching than sense can perceive, does the consciousness of the deathless will to live leave us at the last moment before we must pass through the experience of dying. Intentionally is it said, the experience of dying; for to die is an *act*, and it is not wholly to be apprehended as a state into which we fall. Consciously or unconsciously, to die is a spiritual act, even though it should be the last. It was said of the Son of man: "And Jesus cried with a loud voice and gave up the ghost." Sometimes we have seen others, like their Lord, yielding up their spirits to their God. With conscious awareness of what they were doing, in clear faith, and with purpose unabated, while we have watched, they were taking the first steps over the brink of death's inevitableness, passing into the darkness of our loss as though themselves catching glimpse of the light beyond. Is it true, then, to reality to speak thus of their dying as more than a passive state,

as for them a moment of experience, an outgoing energy of spirit? Is it in this respect comparable to sleep, as we let ourselves fall asleep and again arouse ourselves from slumber? Through death as through sleep, does the will to live persist? It is possible; but who can say? One has said—the One in whom the personal life had come to supreme self-knowledge, and whose will of life was to do the will of God—he said to his disciples as he gave himself up to death: "I lay down my life that I may take it again. No one taketh it away from me, but I lay it down of myself. I have power to lay it down, and I have power to take it again. This commandment received I from my Father" (John 10 : 17–18). Such is the Will of life raised to its highest consciousness of power according to the commandment of God. In the Will of God, which is the first and the last order of all the worlds, the will of the Son of man has the power and the certainty of the eternal life.

Some approaches of men into the very shadow of death have for us suggestive interest as we think of what the world may be into which they passed from us. For years of high thought and noble ends they have had their conversation in the heavenlies. Their purposes have reached far beyond the attainments possible in this brief lifetime here. Alike by their companionships and in their separations, by their successes and in their lonely sorrows, they have been gaining larger hearts for life. Their capacity of intellect and of love has been enlarged through the years of their lifetime on earth; never were they more capable of strong, full, abounding life than in the hour of their death. It is difficult indeed to believe that in a moment all this lifelong preparation for something beyond should be brought to naught; that the momentum of this whole personal energy should suddenly be dissipated; that they should be holden of death. It seems a thing incredible that nature, having brought

man forth in the travail of her forces, and nurtured him amid influences selected for his growth and welfare, having given him this earth for his schooling, and having in reserve the spheres and principalities of the outlying universe for the field of his thoughts and possibilities, should all at once mock her own provision and devour her own children. These chosen ones, who lived with Christ and could die like Christ, believed not an end so incredible. Down into the very shadow of death they went—some esteemed most worthy, dearest to us and well beloved among men; and they faltered not, neither were they afraid; in mortal weakness they were strong; serene was their trust, bright their vision of the light into which they seemed to be awakening as this world, left to us, was fading from their sight. Never more triumphal than in the hour of their mortality was their personal power of living and loving on and on. That they have lost the way through death into life more abounding—this is for us something that we cannot think. The disciples could not think it of the Christ whom they had seen and known.

We cannot see what the disciples saw when they were witnesses of the ascension of their risen Lord; but there are rare instances in which, to those watching, it has seemed as though they almost could see this mortal putting on immortality. Dimly, in lowliest degree, yet in spiritual reality, in the glory of their vanishing from our eyes some disciples have seemed as the Master when he was received up into heaven.

It is not needful, however, to refer to such extraordinary death-bed scenes, or narratives of exceptional religious trust; it is enough to recall instances that often have been known, in which manifestation of personal power to the last moments, even in the very act of dying, has made its own ineffaceable impression on those who witnessed it. They cannot feel that what they saw was

not of the spirit spiritual. Physiology, looking on, may account for much, but not for all. Apparent visions at such moments may not be what they seem; yet even so, they may be symbols of things that no eye can see. It is not the vision, but the power of the spirit to have such visions, that is the reality beneath all our science to explain away. Several years since a valuable book on *Visions* was written by an eminent physician, with an introduction by Oliver Wendell Holmes. Of the "stories of heaven opening over death-beds, etc.," the author, Doctor E. H. Clark, says: "They are, however much our hopes may wish they were not, the last flickering of life's taper; the occasional flashings of cerebral fires, burning the brain's accumulated stores of experience. Probably all such visions as these are automatic. But yet, who, believing in God and personal immortality, as the writer rejoices in doing, will dare to say *absolutely all*—will dare to assert there is no *possible* exception?" (p. 272). Of nine such cases which had been observed and thought to justify such a notion, he remarks that two or three "present phenomena of which, to say the least, it is difficult to give an adequate physiological explanation" (p. 274). From his own long observation of death-beds he recalls "only a single instance of which the phenomena admitted the possibility of any other interpretation than a physiological one." In that one remarkable instance, he says, "there was no stupor, *delirium*, *strangeness*, or *moribund symptom* indicating cerebral disturbance. . . . The conviction, forced upon my mind, that something departed from the body at that instant rupturing the bonds of flesh, was stronger than language can express" (p. 277). He further differentiates the exceptional cases by the fact that in previous visions "a definite object, like a human face or form, was seen"; in these last three cases "no definite object, form, or face was apparently seen. . . . There would

be no revival of brain-cells, stamped with earthly memories and scenes, but something seen of which the brain had received no antecedent impression, and of which the Ego had formed no conception" (p. 278). We are thus come, step by step, through a long course of observations, to the limit of our knowledge of the personal life, and the outlook from the end and height of human experience is—immortality.

Such is the full and final meaning of the personal life as it is known in the Christian consciousness. We believe in life; we do not believe in death. Life is reality; death is appearance. Life is the light that abides; death is the shadow that passes over it, and it is gone. The life is the light of the world. Henceforth the mystery of life and death is not a mystery of darkness, but of light, even the Light that lighteth every man coming into the world. For the moment death contradicts us; but we ourselves are absolute denials of death. Life is the master, death but the servant. The meaning of life in its revelation in Christian experience is

> "The truth to flesh and sense unknown,
> That Life is ever Lord of death,
> And love can never lose its own."

The Christian experience, assured of the immortal worth of personal being, throws its light over the world without, and finds the meaning of nature also to be good; with Fra Lippo Lippi it declares:

> "This world's no blot for us,
> Nor blank—it means intensely, and means good;
> To find its meaning is my meat and drink."

IV

Some suggestions remain to be added concerning the conceptual difficulties, which at times cast down faith in the future life. To rise above these a right use of memory and imagination may be an aid to a reasonable hope. Memory and imagination, these two splendid gifts of God to men, have not been bestowed for the sake of intensifying pain or causing years of sorrow. They are gifts meant for happiest uses. It is well, therefore, for us to avail ourselves of the rich treasures of memory as well as of even momentary gleams of imagination for the reassurance and peace of faith and love. In glad consciousness of bright days that have passed, and serene thoughts of the translation of their memories into happier days hereafter, the Christian will possess his life in the present more abundantly. Forgetting, as he has Christian right to do, the things that are behind, which should be forgotten, he treasures up in his own inner life those things of immortal worth which cannot be destroyed. His is the glad assurance that whatever has made this life well worth living shall not be lost; that God, who was revealed in Christ, has not made his mind to deceive it, nor his heart to break it; that death in its appointed season shall come to him, and to all that he holds dear, not to destroy but to fulfil. His memories shall become his hopes; his sorrows shall become his songs. Aids to the imagination of things unseen the poets render in lines that catch gleams of everlastingness. Even merest fancies, such as little children see, may flit like evanescent sunbeams across the shadows of some lonely path of sorrow. From the mouths of babes and sucklings, human hearts have been taught and lightened. Moreover, there is a scientific use of the imagination which rightly may be called to the aid of reason in the contemplation of the future continuance

of life. The use of imagination in the laboratories of science has often been justified by its fruits. In its principle and method such use of the power of imagination is much the same in the search of reason after the truths of the spiritual realm. It is insight anticipating experience; it is imagination extending knowledge in the same direction as the knowledge already attained. Scientific imagination presides over fruitful experiment and precedes the advance of scientific verification. In the order of spiritual experience, it is true, the verification must wait until elsewhere we may see and be sure. But this delay of verification does not preclude the helpful use of imagination in thinking out the natural lines of present experience toward their possible extension and completion in the life hereafter. We may thus rightly and profitably entertain any thoughts that may lead us out to conceptions of possible enlargement and perfecting of our present powers—such as some extension of our present perception of nature or future exercise in greater freedom of the mental activities which now are our most interesting pursuits; whatever, in short, may serve to enhance those same values of life which now are of richest worth to us personally. This is but to imagine what blossoming shall follow the now scarcely opening bud, to wonder in what heavenly fruitage such blossoming of our own tree of life may ripen.

"If it be true," said Isaac Taylor in the introductory chapter of that once much-read book, *The Physical Theory of Another Life*, "that human nature, in its present form, is only the rudiment of a more extended and desirable mode of existence, we can hardly do otherwise than assume that the future being must so lie involved in our present constitution as to be discernible therein; and that a careful examination of this structure, both bodily and mental, with a view to the supposed reconstruction of the whole, will furnish some means of con-

jecturing what that future life will be, at least as to its principal elements" (p. 4). While deeming it impossible for the mind to conceive of a mode of existence essentially and totally unlike our actual mode of life—for this were to imagine ourselves endowed with a real creative faculty—he remarks: "But the task we now undertake, although arduous, is altogether of another sort; inasmuch as it is proposed to specify the conditions of a mode of existence differing from the present *as little as may be*, and yet in a manner that shall secure the highest advantages. On a line of conjecture like this, sobriety may be mistress of our course, nor need we set a single step, without a sufficient reason for the direction we take. . . . It cannot be thought a hopeless task to trace the rudiments at least of the future, amid the elements of the present life" (pp. 47–48).

This leads us into a field where large opportunity is offered to speculative thought, in which imagination may have free play. We often wonder what we might know, which is now hidden from our utmost science, if our perceptive power were enabled directly to take in vibrations and radiances now just beyond our range of vision. The present range of sight is limited on either side the spectrum, and there are ethereal rays amid whose influences from all the stars we live unconscious of their presence. The visible spectrum extends over but one twenty-seventh of the known range of ethereal vibrations. Sight is rightly esteemed the present perfection of the senses; yet "all objects that vibrate less than four hundred billion times a second, or more than seven hundred and fifty billion times a second, are absolutely invisible to us." There are supposed also to be thousands of octaves beyond the eleven that we can roughly hear.[1] The units or building stones of this whole

[1] This sense limitation is described more elaborately among others by Professor J. Y. Simpson, *The Spiritual Significance of Nature*, pp. 16 *seq.*

visible universe are ultramicroscopic infinitesimals, far beneath this limit of our vision, although lately by an ingenious experiment physicists have succeeded in isolating radium particles and photographing the passage of corpuscles with their electric charge by the trail of vapor precipitated by them across a suitably prepared field.[1] It is easy to conceive that the power of microscopic sight, or of those senses which the physiologists call the "distance-receptors" might be vastly enlarged. It is not so easy to visualize the splendors that might be revealed, if that should occur. If in the future life we should acquire perceptive power beyond some ultra-telescopic range, or sense as receptive even as is a photographic plate to the unnumbered stars—what a universe of glory might become our possession! what freedom of the skies might be ours! in what light of the infinite heavens should we walk!—there would be no night there. Or again, if our sense of hearing were so attuned, as to be responsive to these many notes which now no ear may hear, to what music of the spheres might we listen and sing! With such enhancement of perceptive powers amid all these influences that leave no space empty, what wondrous environment of loveliness, what fine perfection of line and form, what disclosures of order, symmetry, and beauty even where now we see naught but imperfection and ugliness, might awaken to ever new delight our joyous love of nature! There would be for us in very truth a new heaven and a new earth, if we might see and listen so—if but for a little ways there might be pushed farther out the limits of our perceptive response to things around us and above us.

Another imaginative way of looking forward to our future life opens quite simply and naturally when we contemplate what enhancement of some of those things we value most might be afforded if power of swift and

[1] Experiments in the Cavendish Laboratory, by Wilson and Thomson.

unlimited motion through space should be given to us—if we could quickly be where our thoughts are. If the astronomer might follow his thought to the points in the telescopic field that are of most interest to him, to a planet whose singular marks cause him much speculation, to Orion's nebulous mystery of light, or toward constellations shining from out the farthest depth of space; if thus he could gain direct and sure knowledge of these other worlds than ours, at which he can now only look up and wonder as a little child at the twinkling star; what joy of discovery, what ceaseless incitement and satisfaction would be his! How in his pursuit of astronomy, which is here only begun, the future life would be to him worth living! And it might be a more intimate and personal delight, if to us were given power to follow at will where our thought of others may go, to be present where our hearts are. How distances between those most near and loved would cause no more the sadness of our farewells, the loneliness too often through long years of waiting for those whose ways have led them apart; and that other and deeper loneliness, which nothing can fill, when death divides those whom God hath joined together! It is no vain fancy, no unworthy desire to cherish the thought that somehow in that other life, amid all the swift celestial radiances, we whose thoughts even now are swifter than our measures of time and will know no bounds of space, may have added to us hereafter such power of being present, following our thought and will, that wherever in God's omnipresent love our hearts are, there we may be also.

Much the same might be said of another most noble human desire—the hunger and thirst of the spirit for the truth. Among the greater passions of humanity is the love of truth. It is sign royal of the greatness of man's nature. Conceive, then, of the future life as at the same time a ceaseless incentive and a constant satisfaction of

the desire to know, of the soul's quest for truth. It was a remark of Lessing, often quoted, that if the Almighty should offer to him in the one hand the possession of truth and in the other the search after truth, he would choose the latter. But the dilemma lies only in the imperfection of our knowledge, and the justification of Lessing's choice is that the search for truth would lead far and away beyond any possible earthly acquisition of truth. But the seeking and the finding may be one. It is not impossible to conceive that we might be possessed of some swifter power of intuition, some clearer insight and instantaneous comprehension, so that at a glance we might know, that to think would be to understand, that we should have at once an ever-broadening horizon and a sunlit vision. Then the disappointing sense in which the search for truth so often ends would no longer cast us down. The disharmony between seeking and finding, like other discords of this present life, would disappear. The Almighty's gift would be one and the same gift of truth sought and found; without ceasing we shall find as we seek and know as we are known.

Even so, because personal life for us must always be finite, the active powers of our nature shall never lack field for exercise or fail of fresh incentive for their enterprise. Man shall have the infinitude of the creative thought of God for his habitation, and the years of the everlasting for his activities. Without our often weary sense of the baffling limitations of our sciences, or of the confusions of light and darkness in our theologies, or of the failure of our understanding to answer questions which a little child will ask; in a pursuit of truth that shall be ever its joyous discovery, the spirits of those who would know might repeat hereafter the inspired words: "O the depth of the riches both of the wisdom and the knowledge of God! How unsearchable are his judgments, and his ways past finding out!"

CHAPTER X

PERSONAL REALISM—CONCLUSION

We have now reached the end of our search through nature for the meaning of personal life. We have followed the trail from sign to sign from the beginnings of our knowledge of elemental things to the final and full Christian consciousness of life, and its promise of completion hereafter. Throughout this inquiry we have not sought for proofs of anything, but for the meanings of everything. We have carefully endeavored to ascertain the facts of nature, and to discern their significance. Hence we have avoided imposing on our inquiries any theory of knowledge, and we have not sought to weigh our results on the scales of standard philosophies. Nor have we been anxious to square with theological doctrines our interpretations from the nature-side of the Christian consciousness of life. This avoidance, however, of the temptation to depart from our single and straightforward course of thought should not be attributed to indifference to the interest and value of these philosophical and theological pursuits at which we have only permitted ourselves to glance as we have passed by. A new philosophy, if we are to have one, must proceed from such inquiries as have been indicated in the previous chapters, and the next theology to be received, if it shall be vital and real, will prove itself to be a re-adaptation of the beliefs of the living church to the increasing revelation of the thoughts of God through further knowledge of nature and richer experience of the spirit in the personal life.

At the close of our inquiry we may indicate somewhat summarily the bearings that its results may have toward current philosophies as well as theological interests. A central point of philosophical concern is the question concerning reality. What is real, and how do we know it to be reality and not appearance? Our personal life is all very real to us, but is it only to us that it is real?

I have looked out from the window of a cottage on a cliff overhanging the sea, when at night the fog had shut in, leaving nothing to be seen save only the objects within the lighted room from which I looked out; yet as I looked the fog-bank seemed at moments to become whiter, as though about to shift; and apparently lights were to be seen as from passing vessels or gleaming for an instant from the other shore. But these changed as I changed my position: it was a vision without reality; it was not a lifting of the fog, it was only the reflection here and there upon the outlying fog-bank of the lamps of my own home. What more than this, we may wonder, is our mental outlook? What but the evanescent light of our own thoughts reflected back from the vast outlying mystery in which for a brief moment we have our dwelling? If, indeed, it were only that, something of our human trust might be kept—the faith in our home-life as of priceless worth and having in itself a measureless significance, even if it be but as a bright space in the midst of cloudland. For has not the pragmatism of our latest philosophy of life this ever-ready answer to offer to the scepticism within us: Our faith is true because it works? Try it and see how it works; prove this home-faith of the soul by its conduct of your life. If you are content merely to look out of your window and think, if you simply sit down by your fireside and philosophize, you cannot expect to know what is without—what the fog-bank hides. Doing is knowing. Put your light, not behind your window, but in the bow

of your boat. Put forth; keep your eye on the compass, not minding the fog; follow what you know and can trust, and you will find what is real and true; you will not make of your life a wreck. Is this enough for us? Is truth at best only the greater probability? Does experience go further and deeper than this pragmatic advice? Have we true knowledge of reality? Do we have real knowledge of ourselves, or of others, or of anything in the world?

The answer of common sense is that things in our awareness of them correspond to their existence external to us, and that our personal world is in reality what we take it to be. Our perceptions of things mean their real existence. To know that anything really is, we do not need to know perfectly what it is. We know it truly in its given relation to us; we may only know imperfectly or not at all what it may be in its relations to all other things. To know in part is not equivalent to not knowing at all. One does not need to take into his eye all the sunshine to know that there is light; a single beam is enough for that. Nor is it necessary to understand what a ray of light may reveal of its colors and lines in a spectroscope in order that we may know what the light means as it shines for us. Agnosticism darkens the truth of things that are seen when it throws doubt over things that in part transcend our present knowledge. So far as they exist now for us they are not unknown. Our knowledge may go but a little way, but so far as it goes it is valid knowledge. The little child is not deceived when it first becomes aware that its fingers grasp something which is not itself, though it may have no idea what it is. We are only stating thus the common-sense belief in the reality of self and the world. The idea of reality is a simple idea, unanalyzable into anything simpler than itself; but it is a very persistent idea, which all our philosophizing cannot succeed in putting

out of our mind. While we try to think of ourselves as living in a world of appearance only, we are real to ourselves, and the table on which we may write our philosophy of negation is an actual thing to us.

Like all other primary ideas, the real may have meanings for us that admit of description. We may think out in various directions what is given in our primary ideas. There are certain secondary conceptions that emerge directly from our experience of ourselves and the world as real. These constitute the meanings of reality for us. In other words, while we cannot say what substance, or Kant's "thing in itself," is, we do apprehend what it means for us in the actuality of our daily life. We know what we mean when we say: I am, I act, I am alive in the world. Such meanings of reality we would recognize as fundamental in a philosophic construction of the data of human experience. A theory of knowledge fails to be true to life if at any point it loses vital contact with the real as experienced. The following meanings of reality—what we must think about it—we find given in the act and processes of living:

1. Reality is existence independent of our idea of it. The idea of reality is itself subjective, a mental object presented in consciousness. But the idea is about existence that is not made by, nor does it cease with, our consciousness of it. The idea is our mental act responding to, or going out toward, the object presented through the senses. The object is not transferred or transformed into our idea; but our conception of it is the mental interpretation of what is perceived. The idea is not creative but recipient of the object thought as existing. This is real knowledge of an external world.

2. Reality is experienced as energy. The self as an object of our thought is immediately presented in the mind as active being, as an existent power of action. Knowledge of ourselves as energizing is given in our im-

mediate awareness of our own existence. The self, experienced as acted upon, brings to us knowledge of energy external to ourselves. We understand what the world must be from what we know we are. We know ourselves as living power in the midst of the powers that be. Reality is thus apprehended as potential being; as such it exhibits causation and power of development. Hence, so far as modern physics reduces matter to a form of motion, it approaches very near our experience of our own inner reality of being.

3. Reality is existence as something to be known. It exists for the knowers. It is out there in space for any passer-by to see it. It passes by us as a succession in time for us to be aware of. In this sense our experience of reality is rightly said to be also a social act. It has real meaning to ourselves as we find it to have similar meaning to others. In the social experience of external reality our personal knowledge is amplified, corrected, verified. It loses reality for us if we find that it does not have similar aspects to others; we say, our eyes must have deceived us. I look upon a landscape; my vision of it is just its relation at that moment to me. It would be only my creation if it should not be there when I shut my eye. It might be my illusion if another should not be able to see it as I thought I did. It stays there for any one who has eyes to see. It is for me when I return and look again. The real, that is to say, in the outlying world, is a *constant* of nature, and for *all* human experience; its verification is the result of a social experiment—the finding nature there by all men.

4. Reality is existence as a whole. There is one reality, or there is nothing. We could not know it by fractions of it if it were not an integer to be known in part by finite intelligencies. The unity of the whole of being is given in our immediate experience of the unity of our personal being. The first principle of personality is a

principle of unification. I must continue to be one and the same person through life. And we must live wholly to live well. Dissociated personality is abnormal and unreal. It strikes us as something uncanny. The man, we say, is not himself; and we watch for him to come back to himself. Moreover, the daily process of normal life is a process of organizing, harmonizing, making our own in the continuity of our thought and purpose the heterogeneous materials which the world offers to us for our assimilation. Our every-day test of the real is its consistency with our entire previous experience. If something does not fit into our common experience of things we doubt it; we will receive it as true only when we can set it in our whole knowledge of men and things. Accordingly the real has been described as that which is consistent with the total complex of human experience. Hence it is that the dualism between the subjective and objective, which is the standing puzzle of metaphysics, does not concern the common sense of men. In practical living it does not exist as a consciousness of disunity; the two, the self and the other than self, coexist and cowork in the organic oneness of actual personal living. One may at times become keenly conscious of the distance between the self that he would be and the self that he now is; but such inward strife is recognized as something to be overcome, and the felt need and prayer of life is that we may be made whole.

The dualism between man and nature is limited and not ultimate; it rests on a deeper ground of being common to both. The delimitation of self and outward nature is necessary to the upspringing and growth of finite personality, as the deeper ground of being in the one whole of reality is necessary for the existence of each. Hence it is that the personal life comes more harmoniously and fully to itself as it goes out into nature and makes nature its own. It is not materially only that we may possess the

world; animal life may do that after its measure. Our appropriation of nature is also an *appreciation* of it. We may possess it intellectually, rationally, æsthetically, spiritually. It becomes more truly ours through poetry, art, and music. Its beauty becomes our delight, its scenes our parables; we catch its spirit on our imaginations; we set its music to our songs. In the pure love of nature for its own sake there is always a more or less conscious feeling of the deeper unity both of the mind that perceives and the nature that is there to be seen—a sense of one and the same Spirit in all and over all.

There are indications in recent literature of a revival of interest in the question which was much discussed in the earlier part of the nineteenth century concerning the value of the æsthetic sense. Through the appreciation of the beautiful in nature and art are we brought into touch with supersensible reality? This question was raised, but not answered, in Kant's *Critique of the Æsthetic Judgment.* A compendious account of the philosophic views of the beautiful is given by Merz in the fourth volume of his *History of European Thought in the Nineteenth Century.* It would require a volume to discuss thoroughly the cognitive value of our apperception of the beautiful; the following brief statement of the chief problems involved must here suffice. Darwinian science seemed at first to dismiss summarily the whole philosophy of the beautiful by reducing the function of what we perceive to be beauty in the organic world to a purely utilitarian basis as a means of survival for natural selection to use. But in this field, as in others, the question returns: Is that all of it? At three points this interrogation of nature, including ourselves, remains to be answered if we are to have a complete philosophy of beauty: First, granting the utilitarian origin of the beautiful just as far as natural history may show that it goes, there appears to be a vast *overplus* of beauty in nature, which has no appreciable relation to natural selection. (For some discussion of this point I would refer to my chapter on the "Significance of the Beautiful," in *Through Science to Faith.*) The second part of the problem of

the beautiful is physiological. Admitting whatever physiological psychology may render probable as to the sensory origin and character of our pleasure in the beautiful, does that render a complete account of our appreciation of the beautiful? What besides is given in our conscious experience of the world of beauty? In reference to poetry and art there is something for post-Darwinian philosophy to reconsider in Schiller's idea of "æsthetic freedom" and Goethe's "implied but unwritten" philosophy of nature. This valuation of the beautiful reached its full assurance in Schelling's philosophy, as Merz concisely expresses it: "Any conception pertaining to the whole of nature and life would have to deal with the beautiful not merely as a subjective or accidental phenomenon but as something that touches or reveals the innermost core of reality" (*op. cit.*, vol. IV, p. 46). Lotze's estimate of this philosophic tendency is well worth quoting: "It was of high value to look upon beauty, not as a stranger in the world, not as a casual aspect afforded by some phenomena under accidental conditions, but as the fortunate revelation of that principle which permeates all reality with its living activity; it was of value that this idealism put an end to merely psychological theories which reduced the beautiful to a convenient coincidence of external impressions with our subjective habits of thought; and, on the contrary, sought in every object of beauty its objective meaning in the connection of a comprehensive world-plan; . . . and, lastly, it was of value to look upon art likewise not as an accidental play of human powers which might also be wanting, but as a necessary stage in that series of developments which form the essential nature and life of the Eternal and truly Real." (Cited by Merz, *ibid.*, p. 25; Lotze, *Geschichte der Æsthetic in Deutschland*, pp. 125 *seq.*)

Among recent writers Professor J. M. Baldwin has revived, and carried to an extreme, "the æsthetic theory of reality." After the manner of the moderns to impose new names of their own compounding upon reborn views, he calls his theory *Pancalism*. See his *Genetic Theory of Reality*. He says: "We realize the real in achieving and enjoying the beautiful" (p. 277). "If the world is artistic, beautiful, it *cannot be incoherent, disorganized, radically pluralistic*" (p. 308).

Moreover, the recognition of other beings like ourselves is an implicit recognition also of the oneness of being as a whole. No one really doubts the existence of other persons, yet nothing in our experience is harder to prove than this. It is an impossible task to construct a logical demonstration of the reality which we know most intimately of what another's life is to us. For we have no immediate consciousness of the soul of another; we may not transfer bodily what may be going on in another's mind into our own personal consciousness. We cannot literally put ourselves into another's place, and see how what we see looks to him. Yet we may be sure of our knowledge of another's inner life as we are sure of our own. Such is the paradox of experience—the least known becomes the best known. Philosophers have offered different reasons for our assurance of the existence of other beings like ourselves. None are adequate as proof of it; all run back into a first postulate of our own personal experience; we know others as we know ourselves in the reality of being as one whole. We and they breathe the same air because we spring from the same root; the personal life in us and in them has its reality in the common ground, in the one reality of being. It is in and through the Spirit in all and through all that our spirits find one another. We are persons *for* one another; our personal life is from its birth and essentially a social life, because there is One in whose light we all see light—One who is Love before we love. "We love," said St. John, "because he first loved us."[1]

5. Reality is existence as having worth. Something is, and it is for something. Reality as a whole has value; it is good that it is. All beings have some value in their relations to all others. The relative value of each is

[1] This intimate and most real communion of personal lives of which as children of God we are made capable has been finely expressed by Mr. Hocking. *Op. cit.*, p. 265.

given in the supreme good of the whole. This character of worth, like the other qualities of existence, is assured in our partial individual experience of the worth of being. Persons live for some end, and they are something to one another. They are, as Kant would insist, ends in themselves. As such, our social philosophy will add, they may also be means to one another. But their value as mutual means of life cannot rise above its fountain in their worth as ends in themselves, and that in turn is their participation in the worth of being in general—in the goodness of the One Source and Unity of all beings. When we thus attribute value to existence it is true that we simply make a generalization from our individual personal experience of what life is to us; we attribute that which is an ultimate quality of the real in our experience to reality as a whole. But the generalization is valid as it is an extension to the circumference of our knowledge, of the real as it is known at the centre and core of our personal being. We cannot do otherwise than affirm this predicate universally. No scientific law can be strictly demonstrable when carried beyond experimental verification, but it may be shown to be so conformable to all known facts as to leave no room for doubting its universal validity. Similarly, this belief in the ultimate and supreme worth or good of being as a whole is something more than an inference in a process of reasoning; it is the only way in which, from the nature of our knowledge in part of our own being and its ends, reality as a whole can be consistently conceived. It is not merely to say that nature will not deny itself; it is to say that the personal life in nature cannot deny itself. If we are of worth the universe has value. The good given anywhere means the good for everywhere. What is of personal value has its existence in a realm of values. In relation to it all things take on values. The good already realized is prophetic of the greater good which is to be.

The light in the eye of one is evidence of the light for others; the love in the heart of one is assurance of love at the heart of all reality.

The world-view, to which we have been led at the close of our inquiry, may be characterized as that of personal realism. We are real to ourselves, and nature is real to us. Our knowledge of the supreme Being is not a conceptual enlargement of oneself; it is the finite self knowing itself in relation to the true, essential universal Being. Only in such relation to the One can we realize fully our personal lives. The personal realism, which has thus been indicated, should not be regarded by any means as a denial of idealism; but it is refusal to be satisfied with those forms of idealism which leave the idea of the Absolute vacant of all human reality. The true God in religious experience is not an abstraction of all those qualities which render personal life in nature and among other persons precious; rather whatsoever things are good, or beautiful, or true in human hearts and homes; whatever makes our lives with one another most real and dear, and worth living forever: these are the things we remember and think of and blend together and would find made perfect and transfigured in our idea of God. We would have an idealism of realism —an idealism that does not lose at any point vital contact with the real in life and thought. It is not enough for a philosophy to take its start from something real in experience, whether that be the sensational point of the positivist, or the primary ideas of the intuitionalist, or the feeling of the mystics, or lately the non-spatial and unintellectual movement of life in which Bergson delights. So far, so good; there are many points of reality from which a philosophy may start. But when from its chosen point of attachment to something actual a philosophy proceeds to spin out a complicated web of ideas,

with scarce another thread to hold it fast to realities, it resembles the web of a flying spider left hanging in the air. No thinking, positivist or idealist, scientific or metaphysical, can be thoroughly true unless all the way along it keeps in close touch with real life. The fallacy and the unreality of many scientific, as well as metaphysical or theological views, lies often in their mistaking a special relation or a partial knowledge for the entire relations of nature and a larger acquaintance with human life.

The pertinence of this remark may appear if we compare three current conceptions of reality—a scientific, a rationalistic, and a vitalistic. The first is the definition of the real as given by a geometer, Federico Enriques, in a recent book on *Problems of Science*. He says: "Our belief in the reality of a thing rests upon a totality of sensations which invariably follow under certain conditions arranged at will" (p. 56). The second is the conception expressed in Hegel's oft-quoted maxim: "The rational is real and the real is rational." The third conception is Bergson's dominating idea, which might be compressed in a formula antithetic to Hegel's, thus: "The vital movement is the real, and the vital is not the intellectual." To which Bergsonian tablet should be added, of course, his caution against mixing our existence in time with our being in space. Now each of these very different ideas of reality is valid as a partial truth and as far as it goes. Neither corresponds to our experience of reality as a whole. If one takes his departure from either, and does not carry something of the other with it in his thinking, he will reach a fragmentary and distorted view of the world. Thus the first definition of the real, in terms of sense-experience, is good for scientific purposes, but is not enough to live by—true for the laboratory but not the whole truth of the home. Hegel's dictum marks well one note of truth; but by itself alone

it turns actual human history into a course of logic. And notwithstanding Bergson's brilliant service in bringing into clear recognition the spontaneous movement, the non-spatial continuity, the creative evolution of life, his throwing the intellectual factor out of its place in the whole living process robs life of rational reality and confidence. In his dissociation of time from space he has disentangled a single thread of which the pattern of life is woven, and held it up in clear light for philosophy to take notice of it; but in actual living, in the *living* as well as afterward in the *lived*, the two are woven together, and the ideas of space and time cling together so persistently that even Bergson with all his skill in analysis finds it well-nigh impossible to keep them from tangling themselves up even while he is deftly untwisting them. The vital point of advancing life is not so single and simple a thing; the whole of personal being is in every part of it, though no point is the whole of it. We may keenly and with profit analyze ourselves to pieces; but it is the task of a philosophy true to the life to put us together again—to see us whole. Biologically speaking, the dominants of personality are all given in the germ, they work together throughout its development, they constitute together its mature value and full meaning. Individual personality is both real and ideal, or, more truly it might be said, both realizing and idealizing. It is both created and creative. It inherits its world as already existing for it, and it re-creates it after its own ideas. It is both effect and cause; both the issue of the past and a maker of the future. It has come forth from the whole of Reality that was before it; it continues to be as an individual variable in the midst of the constants of nature. It makes its own impression on the world into which without consent of its own it entered: its influence remains in the environment of the new life that follows after it. A personal being is not one in a series of num-

bers; the personal life is both history and prophecy. Its past is its promise. Its measure is not to be told by the number of its days. Its successes may be its failures, its loss its gain, death its victory. Through individual lives the past becomes the future, the old world is made new. Through personal influence the idea is transubstantiated into the fact; the idealism of one is made the heritage of the many. And without idealism human life would fail and fade into bare and colorless existence.

It would require too many pages for us to distinguish and classify the varieties of idealists and realists now in evidence. Instead of a few typical schools of philosophy and a limited number of representative names, as was formerly the case, we now have a large number of critical teachers whose views can hardly be defined by any of the older philosophical distinctions. This is due largely to the shock given to established systems of philosophy by the sudden impact of modern scientific conceptions. Old ideas attacked by new knowledge have to find safety in hastily constructed intrenchments. And pseudo-scientific philosophies are apt to be as positive as they are adventurous.

On the idealistic side Mr. Bradley's *Appearance and Reality* has been so long in the field that it needs here only honorable mention. The more recent effort of Mr. Bosanquet (*Principle of Individuality and Value*) to find an abiding-place for the individual in the Absolute is of interest, but it is difficult for any one who is not a thoroughgoing idealist to follow. Less abstract and not so sure of itself as having the key to the last house of refuge for metaphysics is the semi-pragmatic school of *Personal Idealism*. Our general criticism of this mode of philosophizing would be that their idealism is not personal enough; it appears to have grown up in the academic study rather than out of common human experience. Its theory of truth, for example, is not equal to the sturdy conviction of certainty which grows up on the common ground of human experience. As matter of fact, people in general live in a more deeply rooted belief in truth, and the psychology of conviction is the real thing to be accounted for in a theory of knowledge.

Recently the older views of direct perception have been put in a new form by a number of philosophical teachers who describe their view as the *New Realism*. Its most notable feature is said to be "the emancipation of metaphysics from epistemology." It begins, that is, with the endeavor through analysis of the facts involved in the act of knowing to discover what the nature of things is. It would find out what is actually given in the relation of knowing things antecedently to and independently of any theory of knowledge, as well as irrespective of any conclusions which may follow concerning the ultimate principles or values of the external world.

It holds that "consciousness is a selective response to a preexisting and independently existing environment." There must be something to be responded to if there is to be any response. "Our knowing, moreover, is itself a fact to be taken in its place with the whole manifold of the things that are known." In short, for the realists knowledge plays its part within an independent environment. It is likewise held that a thoroughly realistic view of the relation of the object known and the knower of it is consistent with opposite conclusions as to the nature of the ultimate relations of both. "The point at issue between realism and idealism should not be confused with the points at issue between naturalism and spiritualism, automatism and interactionism, empiricism and rationalism, or pluralism and absolutism." (The citations are from Mr. R. B. Perry's volume on *Present Philosophical Tendencies*, *passim*.) I would add that the new realist cannot consistently be in the same breath a realist toward the outward world and a phenomenalist toward himself. The new realism remains true to its first postulate only when it leaves the door wide open to a new idealism.

In this connection reference should be made to recent discussions of the principle of Relativity. There has lately come into the field, with a challenge to prevailing postulates, a new geometry and mathematics, and also an upsetting dynamics and mechanics. These new theories have become experimentally possible in consequence of the discovery of rays of very high velocities. The phenomena connected with their behavior compel reconsideration of fundamental theorems of the Newtonian dynamics, as, for instance, the law of inertia. While mechanics is thus obliged to re-examine its own basic principles,

it may not claim so confidently to be sufficient of itself to be the foundation for the whole of human experience. Professor Loeb's cock-sure mechanistic biology may yet have a searching side-light thrown upon it by a new mechanics. These partly experimental and partly speculative theories, however, are as yet only possible beginnings of new and verified knowledge. For a general account of them the student may be referred to R. Enriques's *Problems of Science*, and Henri Poincaré's *Science and Method*. It is noteworthy that this most eminent mathematician still maintains the function of intuition in mathematical discovery, and holds the validity of Kant's synthetic *a priori* judgment.

The world-view which we have thus reached at the close of this inquiry leaves us face to face with the Christian belief in God. Is the idea of God in the Christian consciousness of his presence a real response to the real nature of God? In what correspondence to the Christian experience may we have true knowledge of God? In what measure may the personal life at its truest and its best interpret the living God?

In preceding chapters at several successive points we have observed suggestive indications of theistic meanings in the course of nature and life. We have not, however, turned aside from our immediate pursuit to follow such suggestions into the field of Christian theology. To do this would require another volume. But our present task would be left incomplete without some indication of the relation of our conclusion to religious belief; and also a recognition of the urgent need at the present time of a thoroughly scientific natural theology for the restatement of the doctrines of the Christian faith. On scientific grounds a reassurance of religious faith is to be won. It must suffice for us to suggest merely how, in accordance with the line of investigation which we have endeavored to pursue, an answer to the questions just raised may be sought.

Intellectually to apprehend the measure in which the Christian consciousness may interpret the nature of God, we must first go down to the ultimate reality of our own nature and its significance. We may have no assurance of existence other than our own either on earth or in heaven, unless we shall first find it implicitly given in our immediate experience of what the personal life is and means to ourselves. Otherwise no proof brought from without can create a God for us; no sign from heaven would have real meaning of divineness to us. If God does not exist prior to our reflection within the reality of our very being, he will only exist as an idea at the end of all our argument to prove his existence. But a God believed in as the conclusion of a process of thought is not the living God of human history, is not God manifested in Christ. It is just this human sense of the immanence of something diviner in nature and in man that accounts for the persistent hold which the so-called ontological proof of the existence of God has had in religious thought, although its logical sufficiency has often been shown to be unequal to the weight of the conclusion made dependent upon it. The conviction does not depend on the reason given for it; the conviction has first grown out of the deeps of personal experience, and the reasoning is an effort to clear up the ground from which the conviction has issued. The ontological proof runs usually as follows: We have the idea of perfect being; existence is involved in the idea of perfect being; hence the perfect being exists. But it is difficult to see how out of pure thinking we can extract actual existence. From an idea we may reach an ideal existence. The force of the ontological argument lies in the fact that it does not start merely from an idea but from an experience, of which the idea is a symbol or representation—something implicit in our own personal being which is other than self, and of the nature of which we are par-

takers. Belief that the perfect being exists is not merely a conclusion reached by an abstract process of reasoning; it is the resultant of a real process of life. It is a thinking out what we have lived into. Its compelling force will be for every man a question of fact—the fact of the sum total of his experience of himself as a personal being. His philosophy of religion will be not a logical deduction, but an induction from the history of religions, from the total complex of the religious experience of mankind. For us, in harmony with the method of inquiry we have been following, the evidence of the divine existence is not static but dynamic; it is not to make oneself believe in God, but to discover the divine significance of human life. Such conclusion, so far as one may attain it in this living way, will have the same kind and degree of assurance as that of his certainty of his personal existence. He cannot prove it; neither can he doubt it. Such was the certainty of the most human of all lives—the Christ knew himself and his Father.[1]

We have not thus far touched upon the question whether God can be conceived of as having in himself personality. Without entering here into the metaphysical problems which have been raised by this question, we may indicate briefly the method of approach to this subject which naturally follows from the course of this inquiry. Looking on and up toward the supreme Being, the Absolute One, we should carry our conceptions of what we have found to be real and of worth in the personal life as far and as high as thought can go. An element or quality which in our human experience we recognize as very life of our life must be not less but infinitely more so in the Perfect One. An Absolute in which the truth of our personal being is lost becomes

[1] This ground of the idea of God in the reality of experience is forcibly presented in Professor Hocking's volume on *The Meaning of God in Human Experience*, chap. XXII.

meaningless in our conception of it. Personality in our individual consciousness of being is finite, limited, imperfect; but we may recognize degrees in the realization of our own personality; life with us is a development of it. Its enlargement and enrichment may be conceived to be extended indefinitely. Its centre of individual being is constant while its circumference may be always expanding. Thus finite personality tends toward an infinite personality. God is that infinite personality in whom all fulness dwells. If, as is sometimes said, there may be a mode of being that is higher than our personal mode, that must realize perfectly our personal life while it transcends it. It would not be *super*-personal, were it to become impersonal. The highest relations which we realize in our human lives are our personal relations with one another. The Christian faith that God is in personal relation to man is in its last simplicity trust that God can be perfectly all that we may become to one another, and more than all. "He fulfils himself in many ways."

Another question should not be left unnoticed as we come thus to a theistic conclusion. Can we expect to know more of God? As human experience lengthens with the generations, as man's knowledge of nature on either side, the material and the spiritual, reaches further toward the beginning and the end, shall man know more of God? Has his presence now ceased to be self-revealing? Unless our whole way of searching nature thus far has been misleading, and all the signs we have observed shall prove deceptive, the answer to this inquiry is clear and positive. The self-revelation of God on this earth is not finished. If men have eyes to see and ears to hear, there is and always shall be more manifestation of the Divine to be seen; there shall be further teachings of the Spirit to be understood by men. The Christian faith least of all may regard the revelation of God as a

closed book. To think of the world problems, to judge of the ways of the living God as though Divine revelation had come to an abrupt pause at the end of the apostolic age, or at any hour since of the Lord's presence among men, would be to empty of its full meaning his last promise to his disciples to be with them always even to the end of the world. A sure faith must needs be a progressive faith to keep its own assurance. For Christian theology at any hour to halt, and to remain content to stand still marking time, would be for theology to lose its leadership of thought and to be disobedient to the spirit of truth.

The only question to be considered is: In what ways may man expect to be led to larger knowledge of God? Wait, we are told, on the Lord. It is hard on the field of battle to wait under fire for orders to press forward; and it seems at times more than can be borne, in the thick of the conflict between good and evil, or in the face of overwhelming tragedy, to be still and wait on the Lord. The spectacle of others suffering—a vast mass of utter human wretchedness, a whole region laid waste, a harvest of desolation and death—the letting loose by accident of pent-up fires or floods, or a day of judgment coming suddenly in the wars and the woes of the nations—it is enough to make faith itself recoil, and to cause the heart of humanity to cry out: Where is God? Once Thomas Carlyle, walking the streets of London with a friend at night, exclaimed: "How can God see all this, and be still?" So that spiritual genius, Edward Irving, the signs of God's presence for which he looked having not been given, and his prophetic dream failing, in the solitude of the highlands of Scotland looked up to the untroubled sky, and said: "Why does not God rend the heavens and come down?" But another, a social worker of larger charity and clearer vision has said that often, when overborne by the wretchedness which he must see while at his work at midnight in darkest London, he had been

upheld by the thought, how many miles of streets there were where honest people were sleeping that they might begin another day's honest toil. There are many who without needing signs of the coming of the Son of man, or rending of the heavens, have waited on the Lord in the way of judgment, and have followed on to know "His going forth," which "is sure as the morning" (Hosea 6 : 3).

The question just raised concerning possible increase in the knowledge of God involves more than such individual growth in faith; it is the larger question whether through social experience of God, and in the progress of human life as a connected whole, there may be expected further revelation of Divinity.

It is possible indeed that spiritual disclosures may occur in the future, which now we have no reason to expect; we may not, however, consider such manifestations in any practical working-view of our present life. If once it was possible for the Christ so to have lived on the earth as to show men the Father, we may not think it impossible for God to appear in any future age in some visible sign of his presence and power. Such visible reassurance of faith should be regarded as a question of moral probability rather than of natural possibility; faith may venture only to assume that whatever kind or measure of the revealing of spiritual reality may be best in the divine education of the race (to use Lessing's expression of a great truth) will be granted from age to age. Whatever in the wisdom of God is best in order that the love of God may do its perfect work shall not be withheld. The Christ himself asked for no more. He would not know the times and seasons while in his daily life revealing his God to men.

If we may not look, then, for any immediate second coming of Christ, neither are we helped if we turn back and look for more certain and fuller knowledge of what Jesus did and said when once he lived his heavenly life on earth.

Of late years we have recovered a few fragments of records that throw light on those early times; but we may not hope to know much better from historical studies the life and word of Jesus. Perhaps there is a wiser providence than we may have understood in the singular circumstance that in an age of written memorials and extensive literature the New Testament remained so small a book. Its documentary sources, all other records of Jesus' sayings, or letters that his first disciples may have written, when correspondence throughout the Roman world was not infrequent, seem to have been blotted out, as though some unseen hand would leave a clear space around this one, solitary New Testament for the church to keep sacred to the end of time. Over the period between the lifetime of those who could bear witness of Jesus and the age after the apostolic, there seems to have fallen a sudden silence: across that interval of history, hidden from view as a mist lying over the lowland hides the approaches to a mountain, we look and behold, rising clear above all, the single and supreme person of the Christ. We may better know the Christ in the glory of his presence, because we may thus look up to him above all around him; even as the last of the apostles knew him far enough away from his earthly circumstance to know him in his transcendence after the Spirit.

We may not then expect to know more of God by recovering much more, if any, historical material for new lives of Jesus. A hundred, a thousand years hence, the knowledge of God which was given in these Gospels will remain what it is for us now. But there are divers manners in which, as in time past by the prophets, God may speak to his people. Among these possible ways of continued revealings of truth the following may be regarded as opening before us.

1. Man may know more of God as the sciences shall

discover more and more the ruling ideas in the order of nature. Little by little, part by part, natural science is putting us in possession of the working plans of the universe. God's thoughts, said a prophet of old, are not as our thoughts. God thinks in suns and stars. It was Kepler, the astronomer, who said, when he had demonstrated the laws of planetary motions: "I think God's thoughts after Him." "And His ways are not as our ways";—was it not Plato who said, "God geometrizes"? Modern mathematics is following the ways of the Divine geometrician's formative ideas in infinite space. In the forms and the organization of the forces of nature there are the first principles and the constructive ideas of the heavens and the earth to be mastered by the sciences. God waits in nature to be found out.

Consider how much man has learned of God's first principles and continuous mode of procedure since that ancient Hebrew seer had his wonderful vision of the orderly succession of the days in the Genesis of the heavens and the earth. Recent science has carried verifiable knowledge down into the elements of the creation further than Hebrew prophet could possibly have seen. Physical demonstration of the first motions and radiances of ethereal space enables us to conceive more intelligibly how, in the darkness over the face of the deep, there was light. The Mosaic word concerning the creation of the world runs truly thus: "And the earth was without form and void." Our latest scientific formula for the creation, with profounder knowledge, runs thus: The ether of space was without form and void of atomic matter. And with still more intimate truth the science of to-morrow may disclose the hiding-places of creative power. Beyond each, yesterday's and to-day's and to-morrow's, account of the genesis of the heavens and the earth, the mystery of all origins waits for further revealings;—"In the beginning—God." Such revealings of

the mystery of godliness become more manifest as the material in our scientific knowledge of it becomes a veil of thinner texture, and through that which is natural reason draws nearer the spirit of the whole creation.

Consider, again, how much more man has learned of the ways of the Almighty by his searching than Job by all his questionings could find out. Reflect upon the surprises of knowledge which, even within the memory of those now living, have come to us from out of the depths of the riches of God's works. We know to-day far more minutely and intimately the world in which we live than it was known but yesterday. Discoveries which at first were startling have now become familiar knowledge and useful arts. The alphabet of the language in which the heavens declare the glory of God has been deciphered in the lines of the spectroscope. Space, empty to the eye, has become to scientific intelligence filled with pulsations and powers from all infinitude. We are handling in our factories forces of which our fathers had not heard, and commanding powers of the air to carry even the voices of men across the seas as we ourselves but recently never dreamed. So in the world's work, too unconsciously it may be, we are using thoughts of God in things. Some day in all this wondrous knowledge man may awake to find himself nearer the living One.

2. God may be better known through the making of history. The world we live in is not finished; all the known universe is still in the making. We speak of crises fraught with momentous issues in which, we say, history was made. In such hours the grand strategy, the large strategic plan of Providence, has been and shall be disclosed; history is always being made, and the prophet is he who has eyes to see, and who, hearing, may understand what God is doing in his world to-day. He foresees in the present what others shall see on some to-

morrow. History in the making may be a disappointment of human hopes; it is really a progressive fulfilment of God's promise. History is a book of revelation. As the generations turn its pages, the will of God is better known. Consider how much fuller and richer is the material which we have in this age than the apostles could have possessed for understanding what God meant for the whole world in the life and death of Christ. The horizons of their world were narrow, and they understood not what measure of time was needed for their gospel to be preached among all nations. The universals of Paul's epistles, "all things," "the fulness of the time," "to sum up all things in Christ," "the whole creation," "the earnest expectation of the whole creation," "the fulness of him that filleth all in all"—these words take on larger meanings, comprehend vaster spaces, declare a more stupendous conflict of the ages, and are prophetic of more glorious consummation than the Apostle Paul within the boundaries of the known Roman world could ever have foreknown. History puts new meaning into old words. The very words of the New Testament, and the virtues taught in it, have become fraught with memories of the Christian ages and draw richer meanings from the lives of believers who through these many generations have lived in the spirit of the Christ who once walked with his disciples in Galilee. His Christianity is always a revelation. It may be better known another day than it ever as yet has been. Up to the present hour and in the coming years his word is true: "My Father worketh hitherto, and I work." There is more of God for us in this twentieth century to learn than there was a hundred years ago, because God in Christ has done more in the world. There will be more a hundred years from now.

3. God may become more truly known through the further development of man's higher nature. That may

become more spiritually receptive. This is true of the individual; his mind may gain more capacity of spiritual discernment; as his heart becomes more pure he may more clearly see God. To believe as immortals we must live as immortals. What is thus true of the increase of the individual's knowledge of God holds good likewise of the social growth in spiritual wisdom. There may be new social knowledge of God; there will be, as Christianity purifies and enlarges the social consciousness. Through such higher Christian development humanity shall gain happier sense of divinity and ampler understanding of the breadth and the height of the love of God for the world.

4. Furthermore, at needed times and for epoch-making seasons, God may give to the world men chosen from their birth and called to be bearers of his purposes and revealers of his meanings to their fellow men. Such were the prophets of old; such have been men of rare spiritual genius; such shall be in the coming years the chosen teachers, poets. and prophets in the divine education of the race.

I should be led far beyond the limits of this volume should I follow out these inquiries into the field of Christian doctrine. But at the close I would emphasize the need of such studies of natural revelation for the rejuvenescence of the theology of the church. The great principles of Christianity need to be brought out anew in the light of natural science. Although the term "natural theology" in distinction from "revealed theology" has of late largely disappeared from usage, a new natural theology, constructed of scientific materials already waiting for the builder, is a much-needed preparation for a presentation of the Christian doctrines that shall meet the needs of intelligent minds at the present time. The modern mind will not find itself at home in a theology which is not in

harmony with scientific knowledge of the fundamental facts and principles of nature. Accurate and thorough familiarity with the natural sciences was never more desirable in the schools of religion than it is at the present time; for, if Christian theology is to hold its place among thoughtful men, if it is to lead again, as of old, the forces of education, it must keep up with the advance of knowledge and be found thinking clearly and fearlessly at the front of all inquiries.

We have had occasion at several points in the preceding pages to call attention to the fallacy of the closed system in certain scientific views of life. The same fallacy has been the too-easily besetting sin of theology. But so soon as a system of beliefs stops growing it is ripe for dissolution. A finished system of theology is a dead body of divinity. At the growing point knowledge of nature and of God must be kept free. The bane of theological thinking has been, not that with prolonged labor it has made systems of doctrine, but that after they were once completed they have not been broken up. By this it is by no means intended to disparage studious endeavor to systematize knowledge, or to depreciate the value of the intellectual work of organizing ideas into an ordered and consistent whole. As one must have a house to live in, so reason must needs build for itself a system of ideas in which to dwell comfortably. But the habitual dwelling-place of one's thoughts should be open-windowed and hospitable to all truths that may knock at its door. Nor is this all: a man is wont to go daily out of his house into the fresh air and sunshine; so the thinker who would think well, whether he be scientist, philosopher, or theologian, should not remain too constantly within his own system, still less fall asleep in it. He must needs go out of doors. The theologian most of all should go forth from his system to find at times a broader view—an out-of-door theology beyond

the narrow horizons of his definitions, invigorating as the fresh air of the morning, boundless as the ocean, large as the sky for all the clouds of doubt to float and dissolve in, serene and opening vistas of light beyond light as the heavens at evening time. So Jesus spake his parables while conversing with his disciples under the clear Syrian sky; and he blessed the multitude on the mountainside. He lived with his God out of doors, and taught not as the scribes in the synagogue.

Jesus never finished his teaching. Among his last words, did he not say to his disciples: "Ye shall know hereafter"? And it was one who had traced in his Gospel the course of all things accurately from the first, who was also St. Paul's biographer, who tells us that he had written of "all that Jesus *began* both to do and to teach, until the day in which he was taken up." Those beginnings of teaching and work were with authority and power; the church has neither authority nor power to hold them as completed. In these times new problems of science invite Theology to go to school to Nature that it may become fitted to survive in the midst of the conditions of modern thought. The attitude of the modern mind is not so much a questioning of particular teachings of religion as it is a vague uncertainty concerning the reality of all beliefs that lie beyond the reach of immediate verifiable experience. Yet the problems of science more than ever before are opening out toward the supersensible, the creative, the eternal. In this diffuse and often unwilling scepticism the spirituality of the reverent scientific mind is the type of spirituality that shall best avail. Well, then, may it be for the future of the Christian faith if the schools of religion shall imitate the great Teacher, that they likewise may say to the masters of our scientific age: "If I told you earthly things and ye believe not, how shall ye believe if I tell you heavenly things?"

Those who, before the ever-opening mystery of nature and life, *would know*, who, as said a prophet of old, "would follow on to know the Lord," shall not fail of vision and hope. They shall know more deeply the secret of divinity at nature's heart. They shall understand more simply and wisely the meaning of the personal life. For them, in its immortal worth, more than they may know, it shall be the life which is hid with Christ in God.

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